

CSR Report 2011

Corporate Social Responsibility Report

PDF version



Editorial Policy

Mitsubishi Chemical implements Responsible Care (RC) activities for improving environmental, safety, and health conditions during the entire life cycle of chemical products, and issued an RC Report every year since fiscal 1998. Starting in fiscal 2008, the RC Report was upgraded to the CSR Report, covering our measures from wider perspectives, including the economic and social aspects of our business activities.

CSR Report 2011 reports on progress and new development with innovative technologies and products specially featured in CSR Report 2010, with the hopes of conveying that the Mitsubishi Chemical Holdings Group is steadily progressing toward realization of *KAITEKI* society – a truly sustainable society our Group is targeting.

In the three sections for Management Structure, Responsible Care Activities (safety and disaster prevention, occupational health and safety, environmental conservation, quality assurance and chemical products management) and Together with Stakeholders, measures that form the foundation to support innovative technologies and products are also featured.

CSR Report

To disclose the CSR information to a greater number of stakeholders while at the same time considering the environment, we have changed the reporting method since fiscal 2010 from printed reports to website-based publication.

The website offers CSR Report 2011 (PDF version so the entire CSR information can be downloaded) and the CSR Report 2011 Data Section that compiles detailed data on safety, environment and society.

Reporting period

Fiscal 2010 (April 2010 to March 2011)

* Part of the contents also relates to fiscal 2011

Scope covered in the Report

The scope covered in the Report is Mitsubishi Chemical Corporation and domestic and overseas Group companies. However, the scope of performance data aggregated in relation to RC activities includes Mitsubishi Chemical Corporation (including Group companies located on its production base premises) and 17 (domestic) subsidiaries as stipulated by the Companies Act among the companies promoting Mitsubishi Chemical Group RC. The scope of social skills data includes employees of Mitsubishi Chemical Corporation (including employees transferred to Group companies).

Referenced guidelines

- Ministry of the Environment: Environmental Reporting Guidelines 2007
- Global Reporting Initiative (GRI): Sustainability Reporting Guidelines (Ver. 3)
- Ministry of the Environment: Environmental Accounting Guidelines 2005

Issuance

September 2011

Previous issuance: November 2010; next issuance: September 2012 (planned)

Inquiries

Public Relations Department, Mitsubishi Chemical Corporation
Mitsubishi Chemical Holdings Building, 14-1, Shiba 4-chome,
Minato-ku, Tokyo 108-0014
TEL: +81-3-6414-3730 FAX: +81-3-6414-3745

Disclaimer

This report contains not only past and present facts about the Mitsubishi Chemical Group, but also forecasts related to social situations, business plans, policies and estimates of their outcomes. These forecasts and estimates are assumptions or judgments based on the information available at the time of statement. As such, there are possibilities that the future social situations and outcomes of business activities could differ from the forecasts and estimates.

INDEX

■ Message from the Top Manager	2
Impact of the Great East Japan Earthquake and The Group's Response	5
■ Mitsubishi Chemical's Corporate Social Responsibilities	9
■ Activity Results and Targets	14

■ Special Feature

Actions to <i>KAITEKI</i>	20
Progress in technological and product development	

■ Management Structure	43
■ Responsible Care Activities	58
■ Together with Stakeholders	108

■ About Mitsubishi Chemical Corporation	134
■ Third-Party Opinion	137
■ Opinions on CSR Report 2010	141



Message from the Top Manager

Toward *KAITEKI* with the wisdom of chemistry as the driving force

September 2011

Yoshimitsu Kobayashi

Representative Director, Member of the Board,

President and Chief Executive Officer

Mitsubishi Chemical Corporation



We would like to express our heartfelt sympathy to all those affected by the Great East Japan Earthquake that struck on March 11, 2011. Everyone in the Mitsubishi Chemical Group prays for the recovery of the quake-stricken region at the earliest possible time.

“Ensuring Safety and Security” and *APTSIS* as our fundamentals

The earthquake greatly damaged the facilities of Mitsubishi Chemical Corporation(MCC)'s Kashima Plant (in Ibaraki) and several MCC Group production bases located in the Tohoku and Kanto areas. However, we were able to safely stop the plants at all of these bases without facility accidents. We were also able to promptly restart production and supply as planned. I extend my sincerest gratitude to all those from around the world who provided us with their generous support during this time.

At MCC, we believe that “Ensuring Safety and Security” should be the fundamentals of a manufacturer. We therefore gave top priority to this in our response to the disaster. The motto of the Mitsubishi Chemical Holdings (MCHC) Group, represented by the acronym *APTSIS*, includes the code of conduct of Group members as well as the above fundamentals. The MCC Group will continue to strictly observe *APTSIS* in order to remain a corporate group trusted by people around the world.

APTSIS

*Mitsubishi Chemical Holdings Group Member will,
Under a mission to contribute to our Group,
Strive to provide safety and comfort, be environmentally
conscious, and improve human health
To win further trust worldwide.*

Agility

Be alert, act quickly

Principle

*Sharing theories, principles
and ideals*

Transparency

*Transparency, accountability and
compliance*

Sense of Survival

A sense of being on the verge, a sense of crisis

Internationalization

Enhancing our performance within the global market

Safety, Security & Sustainability

*Ensuring safety in manufacturing, trust in quality,
information security and environmental consciousness*

Contributing to sustainable development of people, society, and our planet, with chemistry as our driving force

We are facing turning point unprecedented in the history. What we have seen in recent years are not only such problems as climate change, resource and energy crises, and the uneven distribution of food and water; we have also been witnessing a process in which social, economic, and other conditions across the planet are growing increasingly borderless and complex. This is a great turning point never been experienced by mankind. We believe that the "wisdom of chemistry" is the very key to the realization of sustainable development of people, society and the global environment in such an era, as well as to the solving of those challenges.

In the *APTSIS 15* mid-term management plan launched in April 2011, the MCHC Group set a goal for 2025 of becoming "a company that achieves *KAITEKI* by putting the infinite potential of 'Good Chemistry' to work." Under this plan, the MCHC Group engages in corporate activities based on the three decision criteria of Sustainability, Health, and Comfort.

KAITEKI means a state of true sustainability, and also represents comfort for people, comfort for society, and comfort for the Earth.

Chemistry serves as the driving force toward achievement of *KAITEKI*.

At MCC, we also strive each day to run our business in a way that realizes *KAITEKI* by putting the infinite potential of "Good Chemistry" to work in accordance with the *APTSIS 15* mid-term management plan. In what we position as growth businesses – including white LED lighting/materials, lithium ion battery materials, display materials and functional resins – we strive to provide optimal solutions to our customers that will lead to their achieving *KAITEKI*, by promoting high-performance products and high value-added businesses. We also position organic photovoltaic modules, organic photo semiconductors, sustainable resources, and healthcare solutions as next-generation growth businesses, or innovations that contribute to the attainment of *KAITEKI*, and cooperate with a wide range of partners globally to commercialize them as soon as possible.

This CSR report describes the progress of some of these efforts.

Developing a firm base for corporate activities

Establishing a firm base for corporate activities is essential for creating new value that will lead to the attainment of *KAITEKI*. In the *APTSIS 15* mid-term management plan, the MCHC Group attempts a new initiative to add Management of SUSTAINABILITY (MOS) indexes to the financial indexes. The MOS indexes visualize and quantify our contribution to the sustainable development of people, society and the

global environment. The goals the Group sets under *APTSIS 15* include reduction of environmental burdens such as greenhouse gas emissions, improvement of stakeholder satisfaction and efforts to be an even more reliable and trustworthy company as factors of MOS indexes.

As specific measures under the plan, the MCHC Group takes up the following key points: (1) establishment and maintenance of a safe, stable production system, (2) thorough compliance, (3) leadership and steady implementation of measures for realizing a better global environment and (4) improvement of practical ability and human resource development. Above all, as mentioned at the beginning, establishment and maintenance of a safe, stable production system and thorough compliance are essential for ensuring the company's survival. We will therefore promote specific measures to ensure these points from various angles so as to remain a reliable, trustworthy company.

The MCC Group provides environmentally friendly products to society while at the same time improving production efficiency and energy savings. Given a new target for cutting greenhouse gas (GHG) emissions, the MCHC Group, which occupied the majority of GHG emissions of the MCHC Group, will play the leading role in achieving this goal by pursuing innovative measures. We also cooperate with employees in improving the practical ability of all departments, developing human resources and creating motivating workplaces. It is essential for a globally operating company to respect human rights. As a member of the MCHC Group, which participates in the United Nations Global Compact, we strive to adhere to the Compact's Ten Principles and engage in corporate activities in accordance with the MCHC Basic Approach to Human Rights.

Achieving *KAI TE KI* together with our stakeholders

The philosophy of the MCHC Group, "Good Chemistry for Tomorrow – Creating better relationships among people, society and our planet," expresses our determination to practice "Good Chemistry" to achieve *KAI TE KI* – that is, harmony between the health and wealth of all people and the global environment. By "chemistry," in addition to that field of science, we mean compatibility, relationships and links among objects, among people, and between people and things.

The Mitsubishi Chemical Group will continue to take steps toward achievement of *KAI TE KI* by creating a variety of ways to practice "Good Chemistry" together with our stakeholders.

Good Chemistry for Tomorrow
Creating better relationships among people, society and our planet

Impact of the Great East Japan Earthquake and The Group's Response

Mitsubishi Chemical Group would like to express our deepest sympathy to those who lost their lives in the Great East Japan Earthquake on March 11, 2011. We also pray for the restoration and the recovery of the affected areas at the earliest possible time.

Immediately after the disaster, the Mitsubishi Chemical Group established its Emergency Response Headquarters, and took steps to clarify the impact, respond, and promptly offer aid. This is a report on the impact of the disaster and the response taken by the Group as of July 1, 2011.

Status of damage and restoration

We are deeply saddened to report that one person working with the Mitsubishi Chemical Group died and another is missing as a result of the earthquake. Several of our workers and their family members were also injured.

No accidents or issues occurred at production facilities, despite the emergency situation. All plants were safely shut down. However, the facilities of Group companies located in the Tohoku and Kanto regions were severely impacted. Buildings and facilities were damaged at production, research, logistics, and sales offices in the six Tohoku prefectures, interrupting production and sales activities.

Damage was especially significant in the Kashima area (Ibaraki Prefecture) where the plants of Mitsubishi Chemical, Mitsubishi Chemical Medience, and other Group companies are located. Each of the plants halted production activities. At the Mitsubishi Chemical Kashima Plant, port infrastructure facilities were damaged by the tsunami, forcing us to suspend the supply of ethylene and other basic petrochemical materials. Similarly to the Kashima area, Group company Nippon Kasei Chemical's Onahama Plant (Fukushima Prefecture) was also damaged significantly and halted operation. This facility, however, resumed operation in July 2011, except for a part of the plant and auxiliary facilities that needs repair.

Restoration work proceeded smoothly after the earthquake, enabling us to restart the No2 ethylene plant on May 20 and resume the supply of products. The authorities approved a two-month postponement of regular repair work scheduled at the end of June, enabling us to continue supplying ethylene to customers. The entire supply chain has now resumed stable operations.

We thank everyone in the supply chains for their understanding and cooperation while our operations were suspended.



Berth facilities at Kashima Plant



- Status of damage and restoration at Mitsubishi Chemical Group production bases (from materials distributed at briefings held June 14, 2011)

Main effects of the Great East Japan Earthquake and status of response (1)					
	Location	Company name	Business location name	Damage status at time of earthquake	Status of restoration
Mitsubishi Chemical Group	Ibaraki Prefecture	Mitsubishi Chemical	Kashima Plant (Tobu region)	Entire plant halted operations; water supply was suspended; berth facilities were damaged	No2 ethylene plant restarted operation on May 20, and its regular repair was postponed to the end of August No1 ethylene plant is being restored with the aim of restarting operation at the end of June
			Tsukuba Plant (Ushiku-shi)	Entire plant halted operations	Restoration work is almost complete Operation restarted at all plants
		Mitsubishi Chemical Medience	Kashima Plant (Hasaki region)	Utility supplies halted temporarily, operations continued with minimum resources	All utilities were restored, and fully by the end of Golden Week in May
	Fukushima Prefecture	Nippon Kasei Chemical	Onahama Plant	Plant operation halted due to blackout, halting of water supply, partial damage to facilities	Operations restarted except at some of the plants and auxiliary facilities that need repair
		API Corporation	Iwaki Plant	Facilities were damaged	Operations restarted at the end of May

Support for devastated areas

Donations

The Mitsubishi Chemical Group made donations to the people and areas affected by the Great East Japan Earthquake through the Mitsubishi Chemical Holdings Group. Our Board members and employees carried out fundraising activities, and a total of 17 million yen was sent to those in devastated areas through the Japanese Red Cross Society and Central Community Chest of Japan.

Relief goods

We sent 200 units of portable solar chargers to affected localities (in Iwate, Miyagi and Fukushima Prefectures) as relief goods.

Volunteer activities

Our employees have taken part in volunteer activities supported by the Mitsubishi Chemical Holdings Group since July 2011, to cooperate in the recovery work in affected areas. Employees taking part in volunteer activities carried furniture and other items into temporary housing throughout July, in collaboration with a non-profit organization in Ichinoseki City, Iwate Prefecture. Activities in response to local needs have continued. Mitsubishi Chemical Group employees have participated actively in these undertakings by utilizing company systems such as volunteer leave.

▶ To [Corporate Citizenship Activities](#) page

Dealing with electricity shortages

Concerning the limitations on electricity supply caused by the nuclear power plant issue, we have continued operations without hindering production or supply, while saving about 15% of the electricity used at production sites, by effectively using in-house power generation facilities to the extent possible. Excess power from in-house power generation has been supplied to the Tokyo and Tohoku Electric Power Companies.

● Power supply utilizing heavy oil boiler with excess capacity

- Kashima-Kita Electric Power began selling electricity to Tokyo Electric Power Company on April 21
Equivalent to the electricity used by (up to) 300,000 general households
- Began selling electricity to Tohoku Electric Power Company on June 29
Equivalent to the electricity used by (up to) 150,000 general households

For sustainable production

To continue production even when a disaster or accident with the potential to disrupt business occurs, such as the recent earthquake, the Mitsubishi Chemical Group has established manuals for each business location to protect employees and their families (such as the safety confirmation system), while at the same time taking steps to ensure plant safety (such as automatic shutdown)

When the earthquake struck, action was taken in line with the established manuals, enabling us, with little confusion, to confirm the safety of employees and help those having difficulty returning home. However, communications equipment was disabled at many of our facilities in East Japan immediately after the earthquake, and it took hours to ascertain the situation in these areas.

Given the aspects requiring improvement, the Group is revising its overall Business Continuity Plan (BCP), which also encompasses the responsibility to ensure supplies, assuming a case in which areas close to our Tokyo head office and other plant sites are completely destroyed. At the Kashima Plant, the status of damage is also being carefully surveyed, with the aim of making improvements in both tangible and intangible aspects based on the lessons learned from the earthquake and tsunami.

Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

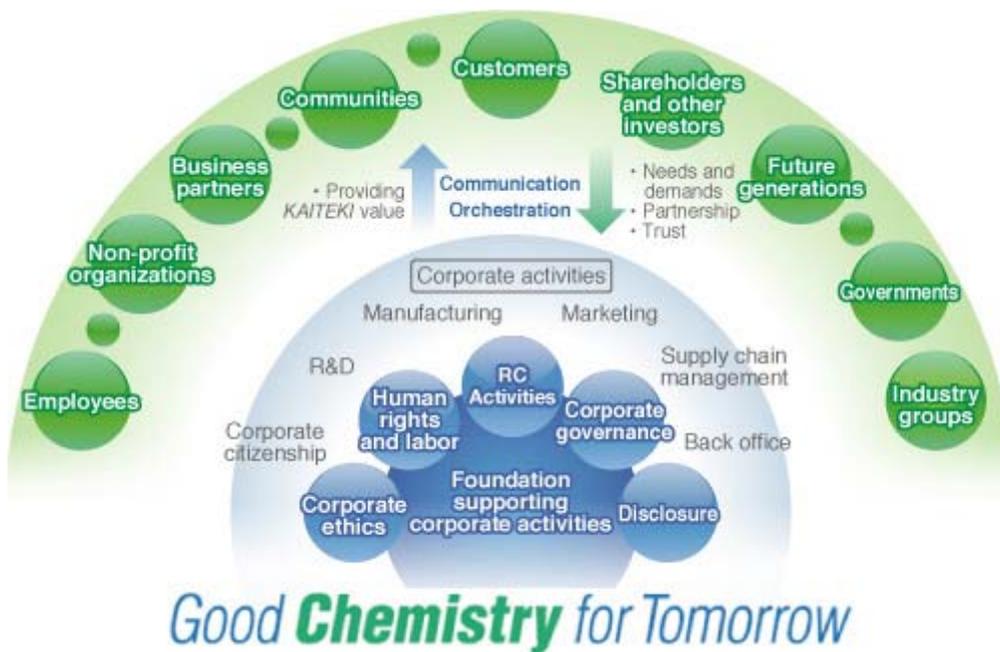
Mitsubishi Chemical's Corporate Social Responsibilities

Basic Approach

The Mitsubishi Chemical Holdings Group contributes to the achievement of *KAITEKI*, setting “Sustainability”, “Health”, and “Comfort” as the decision criteria of our business operations.

Under the Group philosophy “Good Chemistry for Tomorrow – Creating better relationships among people, society and our planet,” we believe it is our responsibility to achieve *KAITEKI* by offering products and services to society through business activities that set sustainability, health and comfort as the decision criteria.

In addition to creating *KAITEKI* values that give form to this idea, the Mitsubishi Chemical Group, as a core operating company of the Mitsubishi Chemical Holdings Group, will continue contributing to the development of sustainable society through promotion and strengthening of activities related to compliance, safety, and the environment (RC), as well as human rights and labor, which form the foundation of our business activities, as well as through social contribution activities by employees both within Japan and abroad.



Foundation that supports business activities

Corporate governance

Our Group has strengthened corporate governance for further enhancing corporate value, setting decision making in management, ensuring precise and prompt operations, clarifying administrative responsibilities, ensuring compliance and strengthening risk management as top-priority issues.

Human rights and labor

We have promoted corporate culture that values human rights and individuality, committing no acts of discrimination or which harm the dignity of individuals, both within and outside the company. Efforts are also being made to form free and open workplaces where diverse individuality is esteemed and the capabilities of each worker are brought out to the fullest, and to cultivate mutual trust and create rewarding places to work through fair personnel treatment.

Responsible Care (RC) Activities

Our Group recognizes responsible consideration of the environment, safety and health as the mainstays of corporate social responsibility in the course of pursuing Responsible Care (RC) Activities.

Corporate Ethics

Our Group is keenly aware of corporate social responsibility, and we will meet the trust and expectations of all stakeholders not merely by complying with laws but also by complying with societal rules, including corporate ethics.

Information disclosure

As a corporate group open to society, our Group has strived to maintain transparency of business activities, disclose information appropriately and promote society's understanding of our business activities.

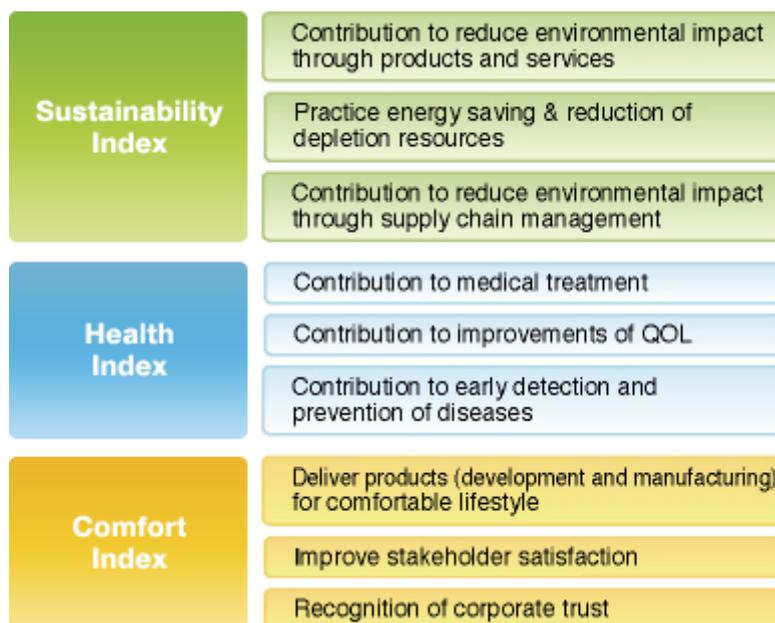
Making the path toward realization of *KAITEKI* visible – MOS indexes

The term *KAITEKI* signifies not only comfort for people but also for society and the Earth, and refers to a truly sustainable state.

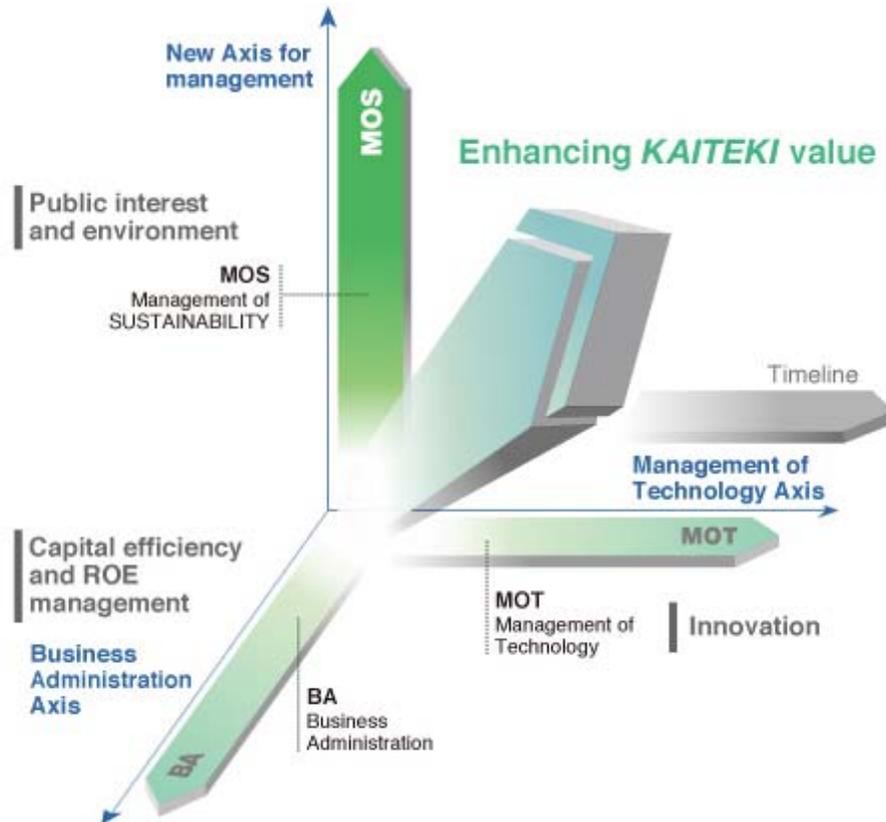
The Mitsubishi Chemical Holdings Group manages itself along three axes: Business Administration, an axis of economic value improvement represented by business performance, Management of Technology (MOT), for deepening technology management, and Management of SUSTAINABILITY (MOS), aimed at improving the sustainability of people, society, and the environment. We call this the *KAITEKI* management method.

While economic value is clearly indicated by numbers, improvements in sustainability are difficult to measure objectively. Therefore, the Mitsubishi Chemical Holdings Group has set MOS indexes as its own index for measuring contributions in this area. The Group has decided to measure the pace of its progress toward the ultimate goal of achieving *KAITEKI*.

● MOS indexes (new MCC)



● Three axes of KAITEKI administration



Promoting KAITEKI activities

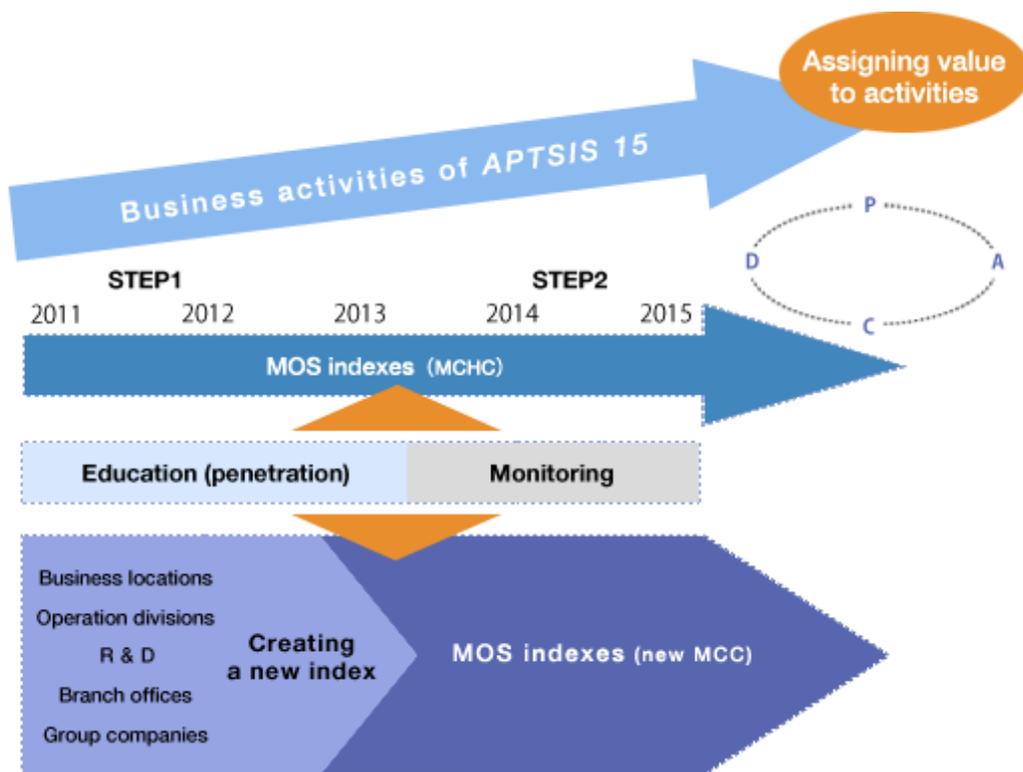
As operating companies of the Mitsubishi Chemical Holdings Group, the Mitsubishi Chemical Group will continue measuring the status of activities using MOS indexes common to the Mitsubishi Chemical Holdings Group, with the aim of realizing KAITEKI. Since KAITEKI is obtained through all business activities of the Mitsubishi Chemical Group, we are planning to establish our own MOS indexes for measuring activities by each division that cannot be represented only by the common index, in efforts for realization of KAITEKI.

Since fiscal 2011 is the first year for MOS indexes, measures are planned to introduce the concept of KAITEKI and MOS indexes in each location and the entire Mitsubishi Chemical Group, and also for establishing an MOS index unique to each division.



Briefing on KAITEKI at a business site

● Schedule for MOS penetration and evolution



Activity Results and Targets

RC Activity Results and Targets

Under the *APTSIS 10* mid-term management plan (fiscal 2008–2010), the following targets were set for the purpose of reemphasizing “safety first” awareness in our activities: thoroughly disseminating companywide recurrence-prevention measures for accidents and trouble and developing specific measures using *hatto-hiyari* and trouble as advanced indexes, in areas of process safety and disaster prevention, occupational safety, environmental conservation and quality assurance; and addressing international regulations on chemical safety and strengthening management with regard to chemicals management. However, the following issues remained unresolved as a result of activities based on *APTSIS 10*. (1) Looking at outcomes concerning process safety, accidents were not eliminated. (2) Concerning labor accidents, serious accidents took place due to non-compliance with rules. (3) Concerning environmental conservation, there still seems to be low recognition of the importance of environmental management. (4) Concerning quality assurance, awareness is still low on the importance of quality data management.

Thus, in the *APTSIS 15* mid-term management plan (fiscal 2011–2015), the following policies were again set for activities based on the safety first policy in the areas of process safety and disaster prevention, occupational safety, environmental conservation and quality assurance: further improvement of recurrence-prevention measures for accidents and serious trouble; fully implementing measures to prevent accidents and serious trouble; and raising awareness as professional experts working on workplace frontlines. Regarding chemicals management, intensification of risk assessment and communications and reinforcement of information management systems will be attempted, with the aim of gaining public trust.

● RC Activity Results and Targets (Fiscal 2010–2011)

[Self-evaluation] ***: Achieved **: Almost achieved *: Further efforts needed

Priority activities	Target for fiscal 2010	Results in fiscal 2010	Assessment	Targets for fiscal 2011
Process Safety and Disaster Prevention				
Achievement of zero facility-related accident	Reemphasize Safety First awareness	– Implemented as planned, but 17 accidents occurred (of which one was a serious facility-related accident)	*	– Further development of recurrence-prevention measures for accidents and serious trouble – Serious facility-related accidents: 0
	Make RC standards consistent throughout the Company	– Finished ensuring consistency of RC standards	***	– Organizing consistent standards and configuring management systems
	Conduct process safety education	– Continued process safety training for mid-level plant staff (250 attended lectures)	***	– Continued as measures to prevent accidents and serious trouble

Occupational Safety and Health

Priority activities	Target for fiscal 2010	Results in fiscal 2010	Assessment	Targets for fiscal 2011
Prevention of occupational accidents	Lost time injury frequency ≤ 0.1	- Loss time injury rate: 0.30 (Group)	*	- Zero serious occupational accidents (closing operations for four days or more) - Loss time injury ratio ≤ 0.2
	Preventing accidents induced by human actions	- Conducted training through experience (2,600 Group company employees participated) - Sharing of <i>hato-hiyari</i> and minor occupational accident examples	**	- Ongoing
Occupational health management	Introduce job level-based emotional health education	- Introduced emotional health education to new employees, first-year employees, staff and new executive training - Implemented training sessions at each plant	***	- Ongoing

Environmental Conservation				
Prevention of environmental accidents and trouble	Zero serious environmental accident	- Major environmental accidents: 1 (oil leakage)	*	- Zero major environmental accident
Reduction of PRTR substance emissions	Promote measures that focus on atmospheric concentration of benzene	- Increase of 240 metric tons of emissions of substances regulated under the PRTR Law from fiscal 2009 (whole Group) - Reduced total benzene emissions by 90 metric tons (8%) due to benzene emission measures	**	- Continue measures that focus on atmospheric concentration of benzene
Reduction of volatile organic compound (VOC) emissions	Promote measures involving VOC-reducing equipment	- Emissions: decreased by 44% from fiscal 2000; increased by 780 metric tons from the previous year (whole Group)	*	- Reduction by 50% or more compared to fiscal 2000, by promoting facility measures

Priority activities	Target for fiscal 2010	Results in fiscal 2010	Assessment	Targets for fiscal 2011
-Reduction of landfill disposal -Effort to achieve zero emissions	Continue efforts to reduce disposal at landfills by 20% year-on-year	- Landfill disposal for the entire Group increased 19% from the prior fiscal year	*	- Promote plans by Group companies
Global warming countermeasures	Promoting energy conservation measures during production	- Unit energy consumption improved by 4% compared to the previous year; global warming gas emissions reduced by 20% from fiscal 1990 (Mitsubishi Chemical), by 1.3% (whole Group)	***	- Promote and continue with energy conservation measures
	3% improvement in transportation-related unit energy consumption over three years	- Unit energy consumption increased by 0.6% from the previous year (Mitsubishi Chemical)	**	- Implemented as laid out in plans of Group companies and divisions
	Reduction of environmental impact at the office and home	- Energy conservation measures continued at the head office and other buildings - Continued self-initiated energy conservation measures at home	**	- Participate in nationwide power and energy conservation activities

Chemicals Management and Quality Assurance

Compliance with international chemical safety regulations	Started GHS-compliant MSDS	- Complete GHS-compliant MSDS and distribute them sequentially	***	- Expand distribution of GHS-compliant MSDS outside of areas mandated by law
	Completed official REACH registration (substances exported to EU at 1,000 metric tons/year or more)	- Complete REACH registration as scheduled for substances exported to EU at 1,000 metric tons/year or more	***	- Complete official REACH registration (substances exported to EU at 1,000 metric tons/year or more)
	Promote international chemical substance management activities	- Participate in JIPS activities (voluntary attempts by enterprises in Japan for strengthening chemicals management based on risk assessment) for	***	- Continue promoting GPS activities

Priority activities	Target for fiscal 2010	Results in fiscal 2010	Assessment	Targets for fiscal 2011
		promoting GPS activities by International Council of Chemical Associations (ICCA)		
Establishment and operation of systems for production information management, green management, etc.	Continue operating and improving systems	<ul style="list-style-type: none"> - Strengthen internal verification systems (revision of in-house regulations and intensification of internal audit) - Start revision of Green Information Management compliant with MSDSplus of Joint Article Management Promotion-consortium (JAMP) 	***	<ul style="list-style-type: none"> - Continue improving reliability of product information - Continue revising Green Information Management System

RC Communication

Mitsubishi Chemical promotion of Group-wide implementation of RC activities	Boost safety awareness	<ul style="list-style-type: none"> - Shared RC information within the Group by continuing to convene information exchange meetings (held eight times) - Conducted Safety Day activities 	***	<ul style="list-style-type: none"> - Continue to hold information exchange meetings - Continue conducting Safety Day activities
Promotion of communications	Continue and improve communications, including through issuance of CSR Report	<ul style="list-style-type: none"> - Published Mitsubishi Chemical group CSR Report, plant site reports, Group company RC reports 	***	<ul style="list-style-type: none"> - Continue communication through CSR Report publication

Activity Results and Targets

Activity results and targets in promoting dialog with stakeholders

Item	2010 targets	2010 results and issues
Together with customers		
Accurate and prompt response	<ul style="list-style-type: none"> - Responding to customer needs and inquiries at Information Center 	<ul style="list-style-type: none"> - Handling 7,855 inquiries each year
Information disclosure to customers	<ul style="list-style-type: none"> - Promoting dialog at Chemistry Plaza - Operating solution website for each domain 	<ul style="list-style-type: none"> - Chemistry Plazas at three locations help customers find solutions while emphasizing respective position and features - Access to website: 100,000-750,000 each year
Together with business partners		
Free, fair and transparent business transactions	<ul style="list-style-type: none"> - Complying with Act against Delay in Payment of Subcontract Proceeds, etc. to Subcontractors 	<ul style="list-style-type: none"> - In-house study meetings held, participation in outside seminars promoted - Audit on procurement divisions at plants and branch offices
Promoting CSR procurement	<ul style="list-style-type: none"> - Preparing for full-fledged start of CSR procurement 	<ul style="list-style-type: none"> - Briefings and questionnaires for business partners
Together with employees		
Human rights measures	<ul style="list-style-type: none"> - Reconfirmation and understanding of buraku issues and eradication of prejudice - Preventing sexual, power and other forms of harassment - Measures focusing on human rights education at overseas Group companies 	<ul style="list-style-type: none"> - Group training given for Group company employees including executives and human rights education using in-house Intranet; overseas training seminars continued
Promoting human resource development	<ul style="list-style-type: none"> - Cultivating next generation of management - Human resource development for business globalization - Offering opportunities to take on challenges and increase awareness 	<ul style="list-style-type: none"> - Held training for next generation of management through General Courses of Mitsubishi Chemical Holdings Business College - Introduced cultivation programs for global staff (entry-level) to conduct practical training (16 younger-generation employees participated) - Continued with open recruitment, in-house free agent, in-house internship and career counseling systems

Item	2010 targets	2010 results and issues
Helping diverse human resources perform well	<ul style="list-style-type: none"> - Further promotion of successful performance by female, disabled and foreign employees 	<ul style="list-style-type: none"> - Introduced three systems: leave for accompanying spouse's overseas assignment, temporary suspension of transfer and declaration of desired workplace - Held lecture meetings (twice) and career training (six times) for female employees - Hired 3 foreign new graduates - Continued attaining statutory recruitment ratio of persons with disabilities
Work-life balance	<ul style="list-style-type: none"> - Reducing overtime and holiday work - Increasing number of annual paid vacation days taken 	<ul style="list-style-type: none"> - Average overtime work hours of general employees: 20 hours/month - Ratio of paid vacation days taken rose for both regular daytime workers and shift workers
Maintaining good labor-management relations	<ul style="list-style-type: none"> - Maintaining and strengthening labor-management relations and deepening labor-management communications 	<ul style="list-style-type: none"> - Activated labor-management communications by improving proceedings of biannual management and labor committee meetings

Corporate Social Responsibility Activities

<p>Living side by side with local communities</p> <p>Social contribution activities</p>	<ul style="list-style-type: none"> - Cooperating for further promotion of chemistry - Promoting exchange with local communities - Educational and volunteer activities and subsidies 	<ul style="list-style-type: none"> - Dispatched employees to various locations to provide chemistry lessons and experimental demonstrations for promoting chemistry in the International Year of Chemistry - Continued support of junior designers - Offered support to victims of Great East Japan Earthquake and affected areas
-----------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



As the core operational companies of the Mitsubishi Chemical Holdings Group, the Mitsubishi Chemical Group aims to realize a *KAITEKI* society by continually exploring the infinite potential of chemistry based on three decision criteria for its business activities: sustainability, health, and comfort.

The report for 2010 featured products and technologies that help to resolution resource and energy issues and build safe and secure society as specific pursuits.

The special feature articles for 2011 discuss the progress in these pursuits, and products and technologies that have shown remarkable growth, conveying how steadily the Mitsubishi Chemical Group is advancing toward *KAITEKI*.

The Sustainability of Resources and Energy



Progress Report 1

Solution-Processable Organic Photovoltaic (OPV) Modules



Achieving the world's highest photoelectric conversion efficiency of more than 10%

Progress Report 2

Lithium Ion Battery Materials



Deploying the Group's Collective Abilities to Build a Global-Scale Supply System

Progress Report 3

Next-Generation Lighting



Building a new age for lighting, based on the keyword *KAITEKI*

Progress Report 4

Sustainable Resources (Non-Fossil Resources)



Commercializing biomass-derived chemical products

Safe and Secure Sustainability



Progress Report 5 **MIMAMORI-gait** System,
a daily gait analysis service



Began application at clinical sites as a healthcare information tool

Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

The Sustainability of Resources and Energy



Progress Report 1 Solution-Processable Organic Photovoltaic (OPV) Modules

Achieving the world's highest photoelectric conversion efficiency of more than 10%

Photovoltaic modules have attracted increasing attention as a clean, sustainable, and safe form of energy that helps prevent global warming. Mitsubishi Chemical is drawing on technologies for applying organic compounds that it has been developing since its foundation, in its quest to find practical application for flexible and lightweight printable Organic Photovoltaics (OPV) that offer features very different from existing photovoltaic modules. The new generation of OPV can be used in places and on objects once inconceivable. Thin OPV modules may be attached to the entire body surface of electric vehicles to obtain power. Power can also be generated on the outer surfaces of buildings and on the walls of sunny and comfortable living rooms. Given the highly innovative nature of this product, there are many challenges to overcome before the product is fully developed and the manufacturing technologies are established. However, Mitsubishi Chemical has made steady progress toward solving energy issues in a *KAITEKI* society.



Business development to date

Utilizing accumulated technologies, began development of photovoltaic modules for the new era

Progress in fiscal 2010

Attained the world's highest conversion efficiency for OPV

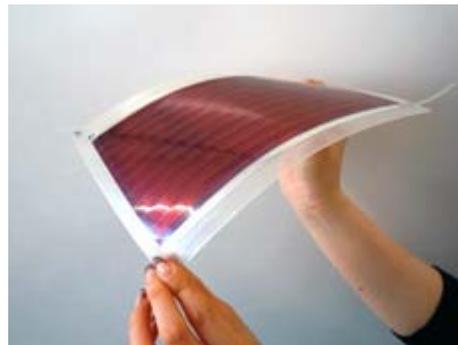
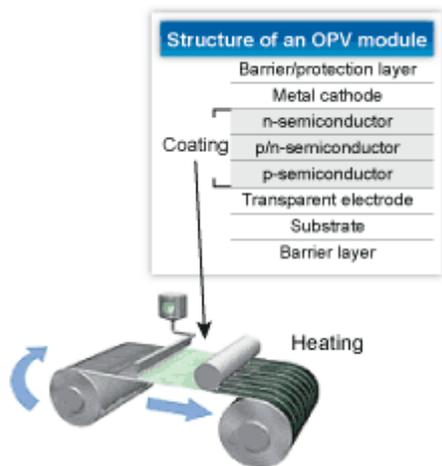
Future development and target

Targeting a 2015 start of volume production by continuing to enhance conversion efficiency and enlarging the modules

Flexible and lightweight photovoltaic modules for the new era

From its very earliest days, Mitsubishi Chemical has been developing applied technologies for organic compounds, which are obtained as by-products in the manufacture of petrochemical products. The Company has used these technologies to consistently create new products, including organic photo-conductors used with copiers. In recent years, we have worked on highly innovative solar cells called printable OPV, again relying on our accumulated technologies. Given the urgent need for specific action to combat global warming and protect the environment, photovoltaic modules are drawing worldwide interest as a clean, sustainable energy source. Today, the type in most common use is the crystalline silicon photovoltaic module. While their conversion efficiency and cost performance have significantly progressed, crystalline silicon photovoltaic modules have found only limited application. This is because they are built on a glass substrate, making them hard and heavy. OPV, in contrast, are made by applying organic semiconductor materials on a thin substrate of plastic film or metal. They are noted for being flexible and lightweight. Since 2008, Mitsubishi Chemical has made a sustained effort to develop practical application for OPV modules.

● Structure of an OPV module



OPV module featuring flexibility and reduced weight

Progress in fiscal 2010

Achieved world's highest conversion efficiency with OPV

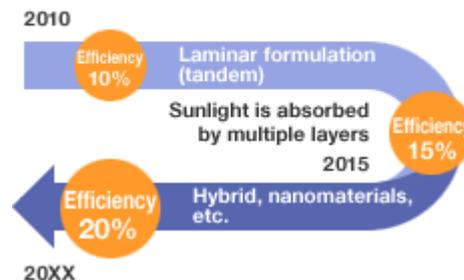
Although the conversion efficiency of Mitsubishi Chemical's OPV was only about 3.4% when development work began in 2008, it continued to improve steadily with technological advances. Conversion efficiency of 9.2% was attained in March 2010 and 10.1% in June 2011, both figures the highest in the world for OPV.. The development team aims to raise the conversion efficiency to 15% and bring the product to market in 2015, a target it is confident of achieving.

At the same time, work is also underway to enlarge the modules, which is essential for their practical application. Steady progress in this regard was also made during fiscal 2010. Construction of pilot facilities where large modules can be manufactured is scheduled to get underway from fiscal 2011, with a plan to conduct demonstration tests of planned applications.

OPV modules, which can be manufactured using a process similar to printing, are ideal for volume production. As a thin, flexible film, they can be attached to automobiles and the outer walls of buildings, and can even be used as wallpaper. Continued technological advances could enable the modules to be printed directly onto three-dimensional objects. OPV clearly have excellent potential for resolving energy issues in a way suitable for a *KAITEKI* society.

● Milestones for High-Efficiency OPV

Further improve photovoltaic conversion efficiency



Another photovoltaic module business for market frontier

While developing practical application for its next-generation OPV, Mitsubishi Chemical has also been marketing its amorphous silicon photovoltaic modules, which are flexible and lightweight, similar to OPV. We are working in collaboration with our partners to open up new markets for both photovoltaic and OPV. We have already established a brand, which we call "gioa." Applications that benefit from features different from crystalline silicon photovoltaic modules, which are already widely used, are being developed. We aim to combine the new modules with different building materials and use them on automobiles. In 2010, modules were mounted on the tubular structure of a mobile phone base station and on the curved wall surfaces of office buildings; examples of applications available only to flexible and lightweight photovoltaic modules. New photovoltaic modules completely unlike conventional models are opening up potential applications in locations where installation using crystalline silicon models is difficult. These initiatives demonstrate our strengths as a comprehensive chemical product manufacturer, capable of developing optimum photovoltaic module products out of different base materials, whether plastic or metal.



Name: JR Meguro Green Building (Tokyo)
 Contractor: JR East Building Co., Ltd.
 Design and supervision: First Class Architect's Office,
 JR East Building Co., Ltd.



Base station for mobile phones (Kochi)

In My View

Sharing ideas for manufacturing new materials and devices, with the aim of practical application

Izuru Takei

OPV Project

Mitsubishi Chemical Group Science and Technology Research Center, Inc.

While OPV is noted for its flexibility and lightness, the challenge has been to improve efficiency. Thanks to the sustained efforts of our entire team, we have now achieved a conversion efficiency of more than 10%, the highest level in the world. We are past the stage of dreaming; practical application for these modules is now a very realistic target.

Day in and day out, we have been experimenting with new materials and device manufacturing, sometimes in small steps and sometimes audaciously. When we check a display monitor to measure the electric current generated by exposing the new samples to light, we feel like figure skaters or gymnasts viewing the electronic scoreboard. Going forward, we will accelerate our R&D efforts to embody our corporate philosophy of "Good Chemistry for Tomorrow – Creating better relationships among people, society, and our planet."



Proposing new value with the gioa brand

Naomi Kusaka

OPV Business Development Department

Mitsubishi Chemical Corporation



In a fiercely competitive market for photovoltaic modules, Mitsubishi Chemical has sought to rapidly establish the **gioa** brand and expand its business. As a consequence, recognition of our **gioa** series is gradually increasing.

In view of growing expectations for wider use of natural energy, we have sought daily to propose new value to our customers, drawing on our ability to apply diverse products ranging from crystalline silicon types to unique and lightweight BIPV (Building Integrated PhotoVoltaic) modules using amorphous silicon photovoltaic cells. We will also incorporate feedback into the development of OPV, aiming to meet market needs and add the products to the **gioa** series at the earliest possible stage.

Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

The Sustainability of Resources and Energy



Progress Report 2 Lithium Ion Battery Materials

Deploying the Group's Collective Abilities to Build a Global-Scale Supply System

Lithium ion battery (LIB) has been used primarily in cell phones, laptop computers, digital cameras, and other mobile equipment because of their ability to produce high capacity at a compact size. Recently, LIB has also attracted public attention as high-performance battery for next-generation eco-cars such as hybrid electric vehicles (HEVs) and electric vehicles (EVs). Further, larger-scale LIB for energy storage systems for home and emergency power sources, which will ensure effective use and the stable electric supply, is being developed and is expected to be commercialized in the future. The Mitsubishi Chemical Holdings Group, in which Mitsubishi Chemical is included, is the world's only corporate group capable of supplying all four key materials of LIB. Making full use of its comprehensive strengths and synergy, our Group continues efforts to develop new technologies and to achieve manufacturing innovation.



Business development to date

Making full use of the Group's comprehensive strengths to be the world's leading supplier of all four key materials

Progress in fiscal 2010

Enhanced the production capacity to expand the supply system globally

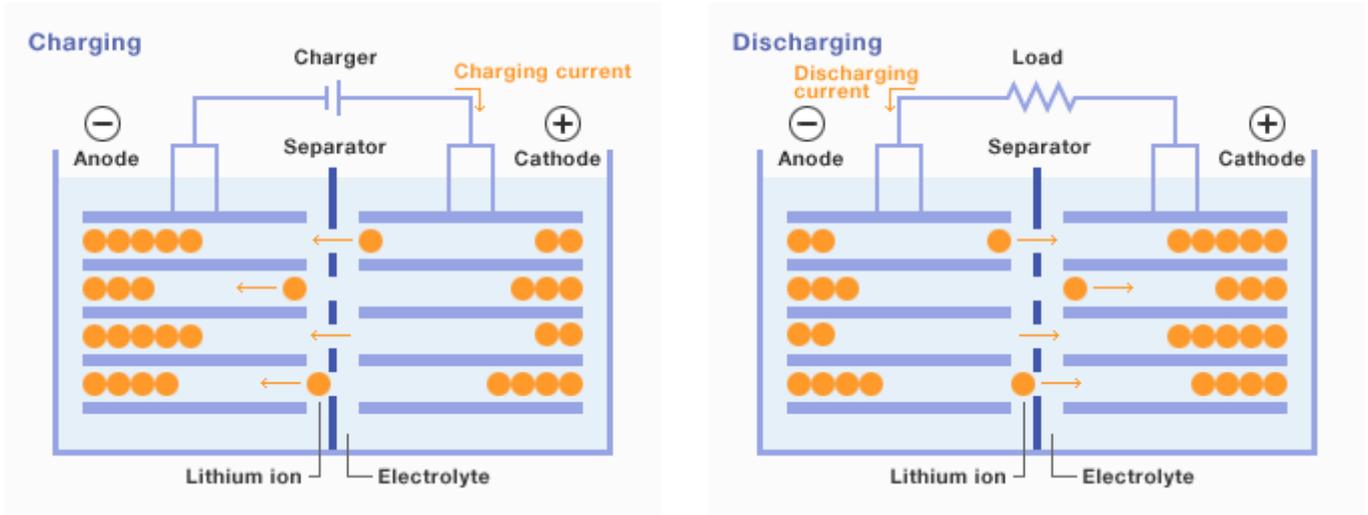
Future development and target

Enhance the material technology and expand the supply capacity to meet market needs for larger batteries with superior performance

The only supplier of all four key materials

LIB is a rechargeable battery which repeats the charging and discharging processes by transporting lithium ions through the electrolyte solution back and forth between the anode and cathode. LIB offers large capacity with light weight and small size, so they have been widely used in laptop computers, cell phones, digital cameras and other mobile devices. LIB now looks likely to find application with next-generation eco-cars such as HEVs and EVs. The LIB market appears set to grow rapidly in the near future.

● Schematic drawing of lithium ion secondary battery's mechanism



The Mitsubishi Chemical Holdings Group is the world's only corporate group capable of supplying all four key materials of LIB – electrolyte solution, anode material, cathode material and separator. Mitsubishi Chemical has been operating its electrolyte solution and anode material businesses for more than 20 years, and commercialized cathode materials in 2005.

We are able to produce high performance electrolyte solutions. Our product has achieved 25% market share, by applying our organic synthesis technologies and developing novel functional additives.

Our anode material provides high output and high capacity by controlling the size and structure of graphite.

We are able to produce cathode material with excellent cost performance by reducing the use of rare and expensive cobalt metal.

The separator business started in 2009 through collaboration between Mitsubishi Chemical and Mitsubishi Plastics. The product has garnered attention for its excellent balance of electrical properties, such as cycle life* and low-temperature output characteristics, with physical and mechanical properties.

* The number of times charging and discharging may be repeated

● Four key materials of LIB



Building supply system to assuredly meet expanding global demands

Demand for LIB is expected to grow significantly with applications for HEVs and EVs. To respond to increasing market needs and establish a worldwide supply system, our company decided in 2010 to enhance production capacities in Japan, the United Kingdom, the United States and China.

For electrolyte, Yokkaichi Plant boosted its capacity by 5,000 tons per year. We also decided to incorporate new subsidiaries in UK and US to manufacture and sell the electrolyte solution with capacity of 10,000 tons per year. The new subsidiaries will be located at the plant operated by Lucite International, a subsidiary of Mitsubishi Rayon Co., Ltd. The UK and US plants will commence operations in the autumn of 2011 and summer of 2012, respectively.

For anode material, Sakaide Plant expanded its capacity by 4,000 tons per year. We have also incorporated a new subsidiary in China with the capacity to produce 4,000 tons per year, aiming to take advantage of integrated operations from the raw material, spherical graphite, to the final product, anode material. The plant is scheduled to start operation in the spring of 2012.

Both our cathode material and separator have been highly praised for their outstanding efficiency and cost performance. We will make full use of our ability to manufacture all four key materials to respond to customers' needs precisely.

Large-scale LIBs are likely to meet the increasing demand of energy storage systems for home-use and emergency power sources in the near future. Besides application in next-generation eco-cars, these applications will lead to the *KAITEKI* society where energy is used effectively while conserving the environment. We will continue pursuing improvements in the performance and safety of LIB and aim to become the world's leading supplier by configuring a stable supply system for the materials.



Manufacturing plant building of anode materials at Sakaide Plant

In My View

Supporting Clean and Comfortable Global Environment with Future-Oriented Technologies

Tadashi Nakamura
Battery Materials Department(Osaka Branch Office)
Mitsubishi Chemical Corporation



I joined the project team as a new employee in 2001, the 10th year of volume production of LIB. At that time, LIB was mostly used with personal computers and cell phones. But we had faith that the technology would open up the future by solving environmental and energy issues when applied to vehicle-mounted devices and large-scale storage batteries. From this standpoint, we have focused on the development and sales of the materials.

LIB has now begun to be used with HEVs and in other large-scale applications, and the market is expanding at a speed that makes it seem like mankind has been waiting for this technology. With the four key materials of LIB that our company is capable of supplying, I hope to realize even higher performance, higher safety and more reasonable prices for LIB, contributing to realization of a clean and *KAITEKI* global environment.

The Sustainability of Resources and Energy



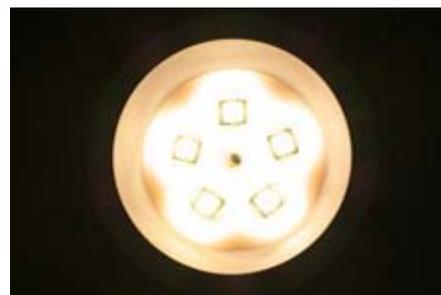
Progress Report 3 Next-Generation Lighting

Building a new age for lighting, based on the keyword *KAITEKI*

Mitsubishi Chemical Corporation (MCC) has a long history in the pigment and dye businesses, and has accumulated an extensive lineup of colorant technologies through its many years of research and development. In recent years, we have applied this expertise to the field of lighting, and have been focusing on the technological and business development of white LED and organic light emitting diode (OLED) as next-generation lighting.

Incandescent bulbs and fluorescent lamps have been the mainstream of lighting for many years, but the use of LED lighting has increased rapidly thanks to its energy efficiency, long service life, and functionality. OLED lighting, which has gained wider public recognition in recent years, has also been keenly viewed as a new product that could alter the conventional concept of lighting given its unique properties, which differ from those of LED.

The world of lighting is profound, and different types of lighting are needed for different purposes and circumstances. MCC will offer both white LED and OLED products, with the aim of providing the *KAITEKI* value to the lighting world by realizing novel lighting technology, where customers can choose high quality, energy-efficient lighting products with advanced functions that best suit their diverse needs.



Lighting design: Uchihara Creative Lighting Design Inc.

White LEDs

Business development to date

Performance of white LEDs has improved significantly through the development of novel red and green phosphors

Progress in fiscal 2010

LED with the world's top-level color rendering properties has been realized, and sales of LED bulbs have begun

Future development and target

Worldwide sales and marketing of next-generation lighting materials and fixtures

Building business models for both lighting materials and lighting fixtures

Lighting that uses white light emitting diodes (LEDs), consumes less than one-eighth the electricity of incandescent bulbs and lasts about 40 times longer. White LEDs have rapidly earned popularity in the past year or so due to an enhanced product lineup and the growing public awareness of the need to conserve energy and the environment. In this area, Mitsubishi Chemical has played important roles in supplying high-quality materials, modules, and lighting fixtures.

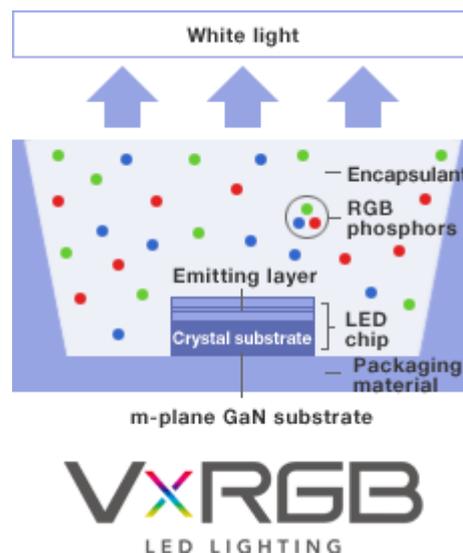
The VxRGB technology, offering the world's top-level color rendering properties and efficacy , GaN substrate for high-eficacy white LEDs

The four principal materials of white LEDs are phosphors, LED chips, encapsulant and packaging material. Mitsubishi Chemical excels at all these four materials.

In conventional white LEDs, a yellow phosphor is mixed with blue light to generate white light. To improve the hue, which differs subtly from natural sunlight, MCC developed unique red and green phosphors for bright LED and has supplied the material since 2006. MCC made it possible to reproduce natural light by mixing the red and green phosphors with blue light.

MCC has also combined a violet LED chip, which uses MCC's patterned sapphire substrates, with red, green, and blue (RGB) phosphors, successfully creating LEDs that have one of the highest color rendering properties (naturalness) in the world. We named this technology **VxRGB** and we are taking steps to popularize it globally. In 2008, MCC also developed a gallium nitride (**GaN**) substrate, which enables a higher level of brightness than conventional sapphire substrates. Using this substrate, we created an LED chip with significantly improved luminous efficacy. The widespread adoption of **VxRGB** also requires an encapsulant and packaging material that are resistant to intense violet light and can produce white light efficiently. In 2009, MCC developed new materials optimized for these two components.

White light mechanism



Progress in fiscal 2010

Started sale of LED bulbs

MCC business development activities were fully underway in 2009 for modules and lighting fixtures. LED modules went on sale, with production efficiently outsourced and MCC's highly competitive materials used. LED bulbs began to be marketed under the brand name

Verbatim in Europe in September 2010 , in the United States and Australia in February 2011, and in Japan in July 2011. Although the competition is tough, we anticipate sales growth since the global market is huge. We plan to expand business by strengthening collaboration with our group companies and by forming alliances with outside companies.



April 2011 saw the opening of **KAITEKI CAFE**, in which our LED lights were installed. Located on the first floor of the Mitsubishi Chemical Holdings headquarters, this is a spot for our customers and general consumers to experience the **KAITEKI** space, staged with the **VxRGB** lights offering high color rendering properties.

[▶ To News Release](#)



LED bulbs released in Europe (left),
the United States (right)



Inside **KAITEKI CAFE**

In My View

Supporting design of comfortable spaces with white LEDs that give high color rendering properties

Aika Kida
Optoelectronics Department
Mitsubishi Chemical Corporation

I am in charge of sales of high color rendering LED materials. Customer demand for these materials continues to grow, which is very exciting. I sometimes feel pressured by the high expectation from customers for these LED materials, but I feel rewarded when they tell me the LED color is exactly the one they are looking for. There are many competitors in this industry, but I hope Mitsubishi Chemical will be the only one company that can provide the high color rendering LED materials. I want to support them in creating *KAITEKI* environments and spaces, in the way that only Mitsubishi Chemical can.



OLED lighting

Business development to date

Our Technologies applied to OLED lighting

Progress in fiscal 2010

World's first color tunable OLED exhibited at an international exhibition

Future development and target

New manufacturing technologies for full-fledged commercialization

Progress in fiscal 2010

OLED lighting changing the conventional lighting concept

Organic electroluminescence (EL) emits light by converting electrical energy to optical energy using organic materials. One of the core technologies involves colorants – an area of great strength for MCC. While the organic EL technology is being adopted in TV displays, cell phones and other electronic devices, Mitsubishi Chemical saw significant potential in its application to lighting.

In February 2010, MCC formed an alliance with Pioneer Corporation, which has a wealth of expertise in the development and manufacturing of OLED panels. MCC continued to work on product development and manufacturing process improvement as well as on market research. In April 2011, at Fuori Salone Milano, a design and interior decoration fair held in Milan, Italy, we exhibited an entirely new concept using OLED lighting that changes how people think about light. MCC also announced at the fair that we will launch OLED lighting under the brand name **VELVE**.

▶ [To News Release](#) 

VELVE
OLED LIGHTING



Exhibit at Fuori Salone Milano
Lighting design: Uchihara Creative Lighting Design Inc.

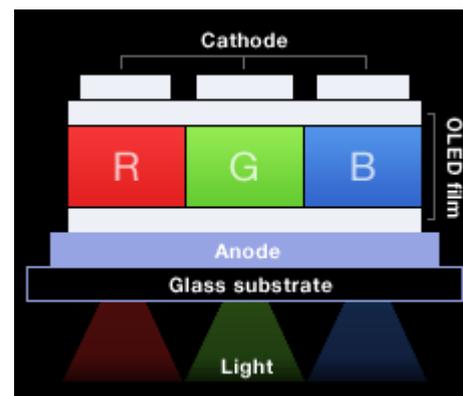
Started sale of world's first color-tunable OLED lighting in 2011

OLED lighting gives numerous benefits not found with conventional lighting, such as glare-free light emission on the entire surface that makes OLED easy on the eyes and touchable without burning. MCC's OLED lighting also features the world's first color tunable capabilities (adjustable brightness and hue). This opens up new possibilities for lighting.

There are many challenges to overcome to improve the performance and cost of OLED lighting, which have long impeded practical application. In spite of these circumstances, Mitsubishi Chemical made use of material technologies by calling on its long history in organic chemistry, developing a new manufacturing process, called wet-process deposition, with Pioneer Corporation, our alliance partner. OLED panels have traditionally been manufactured using the vapor deposition method, which requires a vacuum environment. However, we have employed a coating process, which does not require a vacuum environment, for one part of the multi-layered light-emitting structure. MCC believes this process technology is essential to reducing costs and producing larger panels. We have taken a major step toward full-fledged future commercialization. Taking advantage of the technology, we have started mass production of OLED panels as large as 14cm x 14cm, which we believe to be the largest in the world. So that potential customers can experience the quality of the OLED light, a sample kit mounted with a module was released in April 2011. Mass-production of the module started in July 2011. In the laboratory level, we have successfully achieved light emitting efficiency as high as 52 lumen/W with a half-life time of 20,000 hours, employing the wet-process deposition method. To the best of our knowledge, this is the world's highest among OLED panels employing the wet-process deposition method. In the future, MCC plans to employ the wet-process deposition method for all layers of light-emitting films, promising a drastic reduction in manufacturing costs. MCC will make OLED lighting more accessible to all so that these modules can be used casually for their *KAITEKI* lifestyles. For this purpose, we plan to further improve the coating process and expand the OLED lighting business to a substantial size by 2014.

▶ [To News Release](#) 

● Light-emitting principles and colors of OLED



One of the largest OLED panels in the world
Photographed by Toshio Kaneko

In My View

Pushing forward the development of OLED lighting to make it more popular in our daily lives

Itsumi Maeda

Organic Photoconductor Project

Mitsubishi Chemical Group Science and Technology Research Center, Inc.

I am engaged in the development of OLED lighting using a coating process to achieve low-cost production. OLED comprises several materials and layers, and I have been working hard to clarify how to combine these materials in order to attain higher performance. Experiments involve a great deal of delicate work, but once improvements are achieved, I find it rewarding and it drives me to aim for even higher performance.

OLED lighting can be used at home, at events, in city illumination, on stages and in many other applications. Never before has there been a lighting method that is tunable and dimmable on the entire surface like OLED lighting. So I am always dreaming of new OLED lighting applications. I will continue my commitment to development to overcome the technical barriers and to make OLED lighting even more popular in our daily lives.



The Sustainability of Resources and Energy



Progress Report 4 Sustainable Resources (Non-Fossil Resources)

Commercializing biomass-derived chemical products

Plastics are essential materials to our daily lives due to their broad range advantages such as durability, light weight, and low prices. Meantime, the difficulty of waste disposal by their toughness is a modern-day problem. Moreover, since almost all raw materials of plastics are fossil resources which are finite, in order to continue enjoying the advantage of plastics, technology development which shifts raw materials has been required. To solve these waste disposal and resource depletion issues, Mitsubishi Chemical has developed the biodegradable plastic which can be disposed with a minimum burden to natural environment. We launched sale of the biodegradable plastic named “GS Pla” in 2003. Mitsubishi Chemical has also promoted research and development on biomass-derived plastics. DURABIO, transparent bio-based engineering plastic with significantly improved thermal and impact resistance compared to similar conventional products was established. We started distribution of the sample in 2010.



Business development to date

Started supply of biodegradable plastic, GS Pla

Progress in fiscal 2010

- GS Pla: tied up with a Thai company, PTT Public Company Limited
- Transparent bio-based engineering plastic, DURABIO: started sample distribution

Future development and target

Expanding of lineup of biomass-derived chemical products

GS Pla biodegradable plastic used in Olympic Village

As a comprehensive chemical product manufacturer supporting our daily lives, Mitsubishi Chemical promotes product development that responds to diverse needs. The main needs of plastics has been functional advancement and stable supplies in large volumes, however, environmental consideration has grown in importance in recent years. Mitsubishi Chemical identified new needs ahead of the competition in developing biodegradable plastic that decomposes into water and carbon dioxide (CO₂) when buried in soil. This was accomplished by integrating the company's marketing skill and advanced technologies such as biotechnologies, polymer manufacturing, material development, and so on. The product was released with the name **GS Pla** in 2003.

The characteristics of **GS Pla** have been leveraged for use in agricultural film materials, disposable dishes, and other various uses. During the Winter Olympic Games held in Vancouver in February 2010, the product was adopted as a material for dishes used in the Olympic Village. **GS Pla** has clearly contributed to reducing the energy consumption and costs of waste disposal.

● Biodegradability of GS Pla



Samples: Kraft paper and plastic thickness 20um
 Experimental conditions: Buried in leaf mold 50 degrees celcius/90%RH

Progress in fiscal 2010

Business development progressed significantly, with evolution into biomass-derived material in view

In July 2010, a national program was started in a tie-up with the oil and natural gas company, PTT Public Company Limited of Thailand. The program has aimed at reducing organic garbage from households and restaurants by efficient composting using garbage bags made of **GS Pla** at a Thai resort island named Ko Samet.

In March 2011, a joint venture, PTT MCC Biochem Company Limited, was established with PPT Public Company Limited to take the **GS Pla** business to a new stage. To operate the joint venture on track and establish production bases in Thailand, Mitsubishi Chemical promotes business plans with publicizing the environmental performance of **GS Pla** thinking primarily of contribution to *KAITEKI* qualities in the partner country.

GS Pla has been processed in various applications and evaluated by users as above. Feedback from these applications shows potential that high biodegradability would serve as an effective solution to environmental issues caused by wasted plastic. Furthermore, the users have recognized that the outstanding features of **GS Pla** such as flexibility, thermal resistance, and others enhance performance of other bio-based plastics. **GS Pla** is now being regarded as a promising material for composite plastics.

On the other hand, one of the raw materials of **GS Pla** is petroleum-derived succinic acid. Mitsubishi Chemical has successfully developed manufacturing technologies for biomass-derived succinic acid, and PTT MCC Biochem Company Limited has worked for its commercialization. Through these efforts, we plan to make **GS Pla** a biomass-derived plastic.



Participants hold a garbage bag made of **GS Pla** after the signing ceremony held in Thailand in July 2010

DURABIO transparent bio-based engineering plastic offering groundbreaking performance

DURABIO transparent bio-based engineering plastic, developed by Mitsubishi Chemical, is not only biomass-derived, but also possesses optical properties at levels higher than conventional transparent plastics. This revolutionary product offers excellent durability against light (discoloration caused by light), heat, and impact. Mitsubishi Chemical plans to capitalize on the properties in applying the product in a wide variety of areas including cutting-edge optical and energy-related materials, an alternative to advanced-function glass, electronic devices, automotive bodies and interior and exterior finishing materials, and building materials. Mitsubishi Chemical demonstrates new possibilities of sustainable resources by advancing to new applications where existing biomass-derived plastics have not been used yet, and realizes a *KAITEKI* society.

In fiscal 2010, we started to deliver samples from the new pilot plant built at the Kurosaki Plant, asking users for their specific evaluation.

We intend to contribute to realize a sustainable carbon society through expansion of **DURABIO** market shifting raw materials from fossil resources to biomass-derived materials along with effective uses of resources.



DURABIO transparent bio-based engineering plastic

Realizing a *KAITEKI* society with a reduced environmental load by converting raw materials to materials derived from biomass

Junichirou Oomura

Sustainable Resources Business Development Department

Mitsubishi Chemical Corporation



Plastics are essential in our daily lives. I have been involved with plastics since I joined the company, and believe it is my mission to realize a *KAITEKI* society with less environmental load by solving the waste disposal and the resource depletion issues that are receiving so much attention these days. I have consequently engaged in work with a focus on converting raw materials of plastics to those derived from biomass.

We can not often feel the need for biodegradable plastics in Japan because waste is incinerated for disposal. However, looking globally, I recognize that the demand for these plastics has definitely heightened. And, converting raw materials to biomass will be a solution which can quickly serve resource depletion issues. A joint venture with PTT Public Company Limited of Thailand was established and I regard 2011 as the year of making a new start year for speeding accelerating the expansion of the **GS Pla** business.

Safe and Secure Sustainability



Progress Report 5 MIMAMORI-gait System, a daily gait analysis service

Began application at clinical sites as a healthcare information tool

In fiscal 2009, by applying advanced computer technologies for analysis and simulation to areas of medicine Mitsubishi Chemical Corporation has started a new gait analysis service called the **MIMAMORI-gait** system. The company has cultivated these technologies in manufacturing various chemical products. The system consists of a small recorder that measures and records people's daily activity and ambulatory rhythm, along with the unique data analysis technologies. At first, **MIMAMORI-gait** Project was started with some expectations that it would be an effective tool for clarifying the clinical state of Parkinson's disease patients. The system's usefulness was confirmed during 2010, and some researchers with medical institutions discovered numerous other applications, such as motor function evaluation and assistance with rehabilitation for dementia and hydrocephalus patients. We are striving to improve and disseminate the **MIMAMORI-gait** system as technology that will contribute to the health of the aging Japanese society, and making *KAITEKI* a reality.



Business development to date

Started services to medical researchers in fall of 2009

Progress in fiscal 2010

An increased number of published papers helped raise awareness of the service. Service content is being improved in preparation for developing the system for use with general medical equipment.

Future development and target

Being sold as general medical equipment, and commercialized after further widening its applications

MIMAMORI-gait system born out of plant analysis technologies

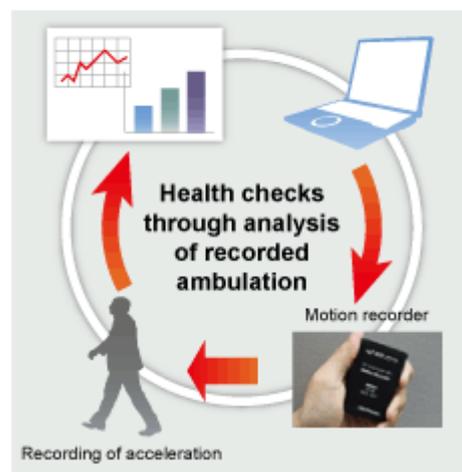
Computer data analyses and simulation are essential for manufacturing new products and improving production processes at petrochemical plants. We have also strived to make these technologies more sophisticated. These data analysis technologies improved through long years of research may be applied widely beyond in-house production sites. Among these applications, our team decided to focus on application of the technologies to the human body.

The question was, would it be possible to judge changes in the human body by analyzing data on people's motions, ambulatory intensity and rhythm ?

Specific actions started in 2004 to address this theme. Surveys on social needs and research and technological development revealed the need to clarify the clinical state of Parkinson's disease¹ patients. In October 2009, the **MIMAMORI-gait** system service has started as a research tool at medical institutions.

¹ Parkinson's disease is an intractable disease of the nervous system where bodily actions slow down and are gradually lost because discharge of the neural transmitter substance dopamine in the brain declines, which in turn adversely affects the functions of the neural circuit that controls kinetic motions

見守りゲイト



Diverse types of bodily rhythm, predominantly those involving walking, are measured and recorded continuously, 24 hours a day

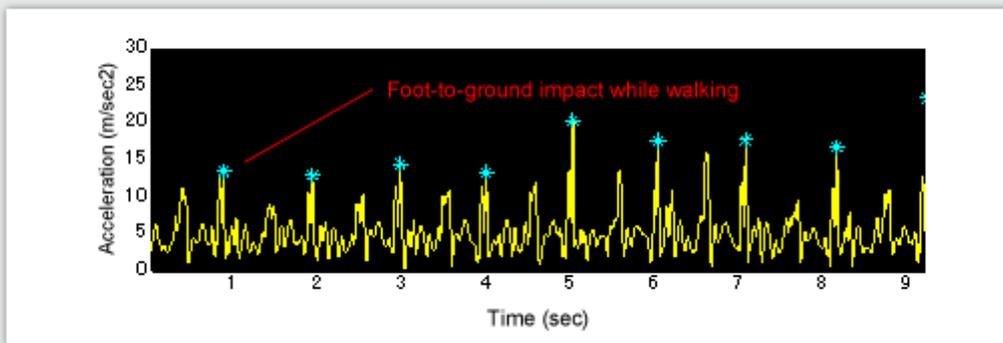
Drew attention as a tool to assess clinical condition of Parkinson's disease patients

With the **MIMAMORI-gait** system, users are asked to wear a motion recorder, the high-precision acceleration sensor that records forward/backward, left/right and up/down motions, and the unique system analyzes the collected data to find the ambulatory intensity and rhythm, stride, and other factors. Since the recorder is about the size of a cell phone and compactly designed with a long-life battery, it can be worn for a long time without the user feeling burdened. A major feature of the system is that highly objective data may be collected throughout the day.

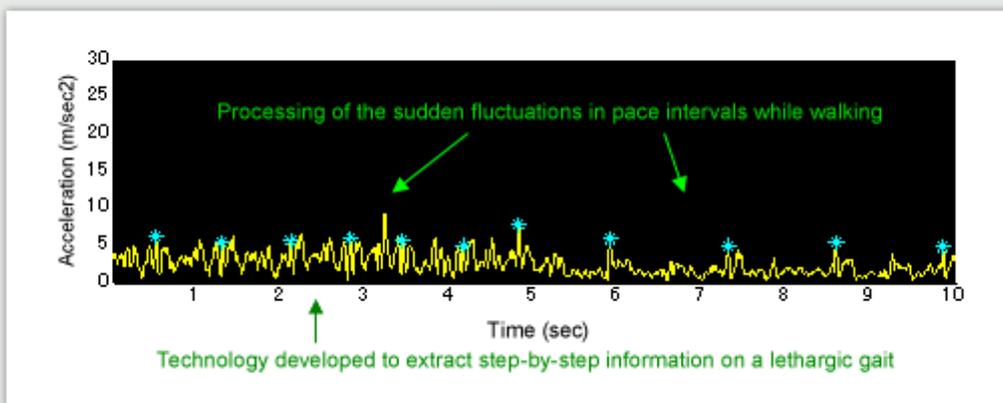
The clinical condition of Parkinson's disease patients changes during the day, so it is difficult to assess the quality of life (QOL) for patients in their daily lives just by observing them in the examination room. The **MIMAMORI-gait** system is expected to serve as a tool that indicates objective indexes that could supplement understanding of the clinical condition obtained through medical interviews. Mitsubishi Chemical has enhanced the indexes' accuracy while offering the service to diverse medical research groups.

- Developing indexes on ambulatory intensity, rhythm and other factors

Graph representing a healthy person walking



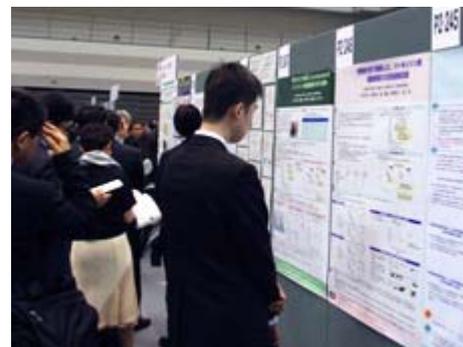
Graph representing an ill person walking



Progress in fiscal 2010

Applications for disease prevention and rehabilitation also expected

The functions and utility of the **MIMAMORI-gait** system became widely known during fiscal 2010, as it came to be used in research by a greater number of medical institutions and more frequently presented in research results at academic meetings. In May 2010, **GAITVIEW** software was released. It was developed for use on a personal computer with the same analysis algorithm used in the **MIMAMORI-gait** system. And medical professionals can install and use it in personal computers. Until then, the recorded motion data were sent to Mitsubishi Chemical and the analysis results were returned to the user. With the software, medical professionals can extract analysis results to suit their purposes.



Scenes from academic meeting

As a result of the improvements in the **MIMAMORI-gait** system and development of **GAITVIEW** software, new applications of the system became known, in addition to the uses with Parkinson's disease patients. Examples include motor function evaluation and assistance for rehabilitation of dementia and hydrocephalus² patients.

With the expanded application of the system, a greater number of medical professionals indicated a desire to use the system in their clinical practice. Mitsubishi Chemical responded by releasing Activity Monitor MG-M1100 in May 2011, which incorporates the technologies of the **MIMAMORI-gait** system, as general medical equipment. The system is now being used at clinical sites as a new healthcare solution (healthcare information tool) offering valuable information for diagnosing, treating, and preventing different types of brain dysfunction.

● **Activity Monitor MG-M1100, general medical equipment**

Motion recorder
ゲイト君



Analysis software
ゲイトビュー



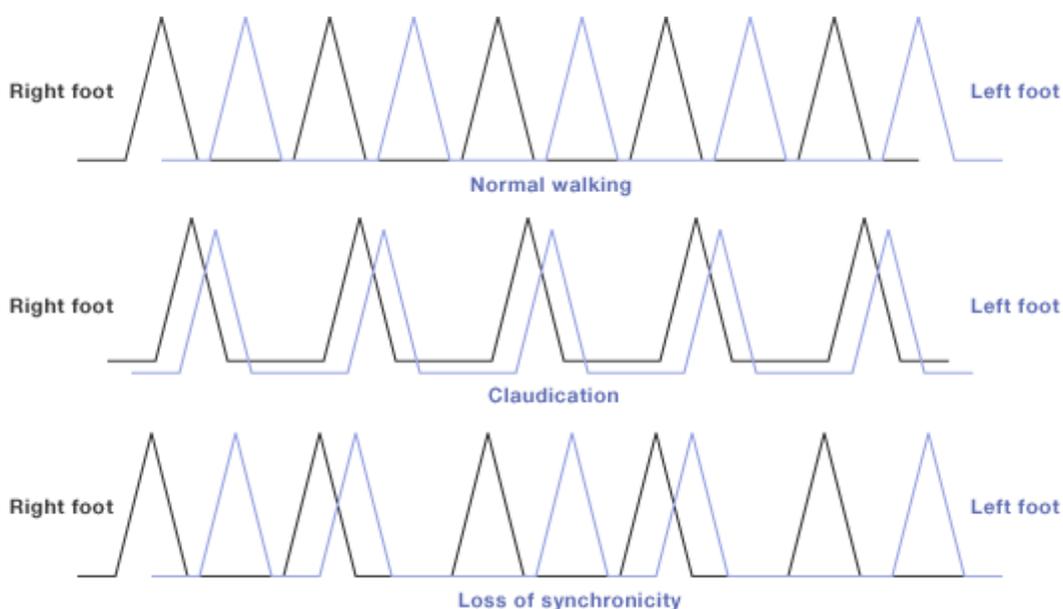
The MG-M1100 Activity Monitor is an apparatus in which measurement is made using the GAIT-kun, a high precision motion recorder, which records acceleration on the three axes, and the data are analyzed by GAITVIEW software so the results may be used to support diagnosis on ambulation abnormalities.

The research and development team for the **MIMAMORI-gait** system has selected "falling" as a new theme for further development of the system. Elderly people have a high risk of suffering serious injury resulting even from a minor fall. By observing ambulatory conditions, abnormalities that could lead to an unexpected fall can be promptly detected. From fiscal 2011, the team plans to concentrate its efforts on developing indexes for analyzing data related to falling. Specifically, the team believes the risk of falling is aggravated when synchronicity in ambulatory motion is disrupted, and is working to develop indexes for evaluating synchronicity.

There are many ways the **MIMAMORI-gait** system can help improve *KAITEKI* qualities in Japan, where society is aging and the number of children is declining. Mitsubishi Chemical will continue working to improve and promote the **MIMAMORI-gait** system while listening carefully to the voices of medical professionals, patients, and their families. The efforts aim to expand its applications in areas such as disease prevention, nursing care and rehabilitation, in addition to supporting medial treatment.

² Hydrocephalus is a disease in which excess spinal fluid gets trapped inside the skull, which pressurizes the brain and produces a number of different symptoms.

● Schematic diagrams of relations between ambulation and synchronicity



For example, when a person hurts a knee and limps because part of the body's functions are damaged, the legs will move in a steady rhythm even though the stride could differ when stepping from the right to left foot, and vice versa. Yet when the motion controlling function of the brain is damaged, the person can find it difficult to move in a steady rhythm. Synchronicity in ambulatory rhythm resultantly declines or is lost, and the person is more likely to fall when walking.

In My View

Aiming for commercialization to contribute to health and *KAITEKI*

Makoto Takada
Corporate Marketing Department
Mitsubishi Chemical Corporation



I joined the project team shortly before we had a development policy of applying our technologies to medical and healthcare areas. I was aware of the superiority of our data analysis technologies, but I was concerned whether an information business applying the technologies to other areas would be feasible. I know there are many difficulties to overcome, but our team believes the service is essential for aging society, and we are working towards commercialization.

Preventing falling, the new theme for our research and development, goes beyond support for medical treatment and involves preventive medicine. We aim to expand application of the system to cover healthcare, so that it can be used by all ages. By fusing medical treatment, healthcare, and IT, we hope to contribute to health and *KAITEKI* by offering healthcare information that patients truly need without burdening them, as a healthcare information tool.

Basic Concept

As a member of the Mitsubishi Chemical Holdings Group, the Mitsubishi Chemical Group follows the basic policies for management of the Group determined by Mitsubishi Chemical Holdings Corporation (MCHC), and shares the management policies and management strategies of the Group determined by MCHC. Mitsubishi Chemical Corporation also upholds the Group policies and rules determined by MCHC to ensure that it fulfills its corporate social responsibility in areas such as [Internal Controls](#), [Risk Management](#), and [Compliance](#)  (compliance with laws and corporate ethics), and actively pursues management initiatives to enhance corporate value as a core operating company of the MCHC Group.

▶ [To MCHC Management Plan page](#) 

Management Structure

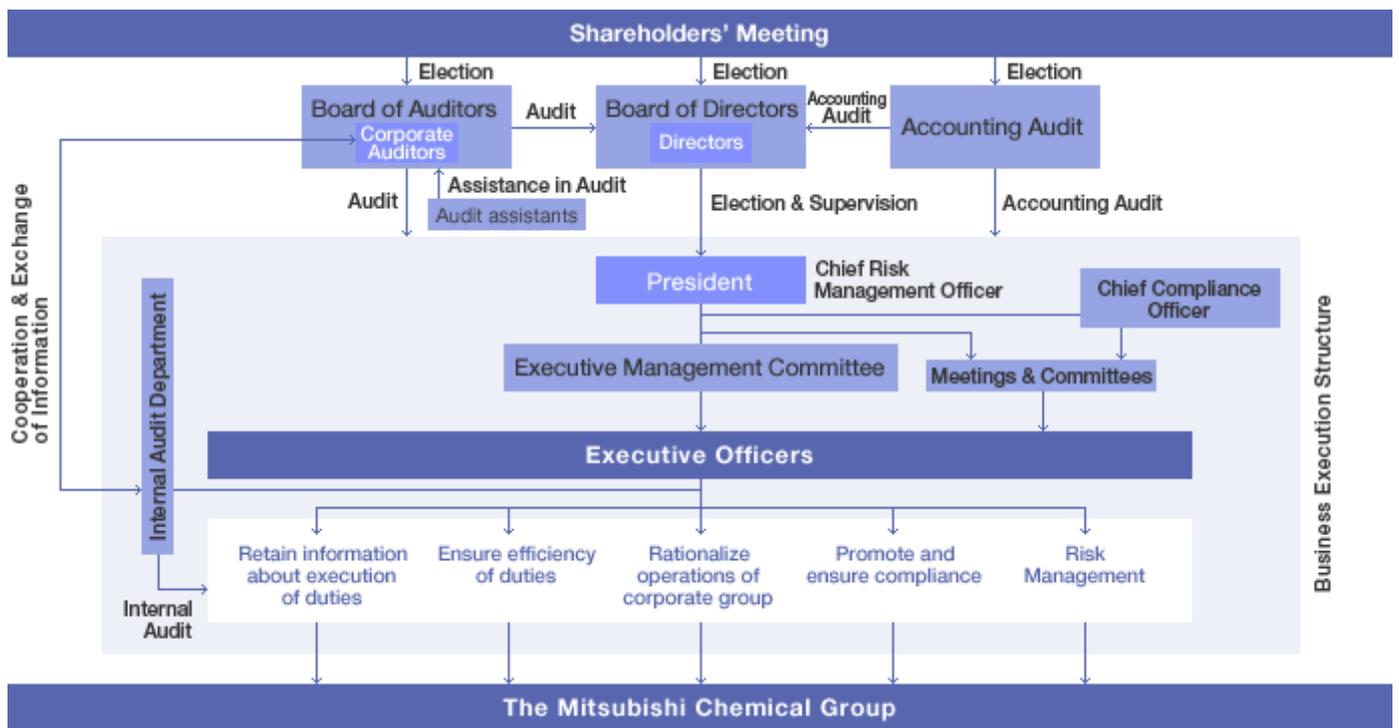
Corporate Governance

Corporate Governance

The Mitsubishi Chemical Group's top priorities for corporate governance are to ensure fast and efficient decision-making and business execution, clarify management responsibilities, ensure compliance, and strengthen risk management.

Mitsubishi Chemical Corporation (MCC) operates a basic corporate governance structure consisting of the Board of Directors, the Executive Management Committee, Corporate Auditors, and the Board of Auditors. The Company has rationalized managerial decision-making and execution, separating the executive and management functions through adoption of the executive officer system, and making provision in internal rules for deliberative and decision-making bodies such as the Board of Directors and the authority attached to various positions.

● Corporate Governance Structure of the Mitsubishi Chemical Group (as of April 1, 2011)



Board of Directors

As a general rule, the Board of Directors meets once a month. The Board makes decisions on important managerial matters and basic matters concerning Group management, as well as auditing the execution of duties by Directors, in accordance with the Regulations of the Board of Directors and other relevant regulations. The seven directors (five of whom concurrently serve as executive officers) form a management structure that can adapt quickly to a changing environment and, to further clarify the managerial responsibilities and role of each Director, the term of office for a Director is one year. Director candidates possessing the right skills and qualities to realize the management philosophy of the Mitsubishi Chemical Group and fulfill its social responsibility are selected by the Board of Directors, proposed to the Shareholders' Meeting, and elected by its resolution.

▶ [Annual Report](#) 

Executive Management Committee

The Executive Management Committee assists the President in making decisions, deliberating important matters concerning business execution such as the investment and financing of MCC and the Mitsubishi Chemical Group. Any important managerial matters deliberated by the Executive Management Committee are executed pursuant to a resolution of the Board of Directors.

As a general rule, the Executive Management Committee meets twice a month. The committee is comprised of the President, Directors, Executive Officers responsible for divisions and departments, and Corporate Auditors.

Corporate Auditors and Board of Auditors

MCC has Corporate Auditors and a Board of Auditors to audit and supervise its activities. Besides attending meetings of the Board of Directors and other important meetings and committees, the Corporate Auditors verify information contained in reports from Directors and other relevant parties, investigate the status of the Company's business and property, and audit the execution of duties by Directors. As a general rule, the Board of Auditors meets once a month to discuss and pass resolutions on important matters concerning audits such as the audit policy. As of the end of June 2011, MCC has four Corporate Auditors, including two external auditors. The Accounting Auditor and Audit Office cooperate closely when performing audits, exchanging opinions on their respective audit processes and audit results.

▶ [Annual Report](#) 

Meetings, etc.

The Company has a number of committees and meetings, including the Compliance Promotion Committee, the Risk Management Committee and the RC Promotion Meeting. Any important matters deliberated by such committees and meetings are referred or reported to the Board of Directors or the Executive Management Committee.

MCC also has local labor unions at its head office (includes branches and branch offices) and each of its offices and production sites, and these local labor unions form the Mitsubishi Chemical Labor Union Federation. Twice a year, the Company holds a central management conference for labor and management, giving both sides the opportunity to discuss management issues. Management headed by the President, union members led by the Labor Federation Chairman, and the representatives of each local labor union attend the conference and share their opinions candidly and honestly.

Basic Policy and Status of System Introduction

Mitsubishi Chemical Corporation (MCC) strives to strengthen and thoroughly implement its internal control system based on the basic policies decided by the Board of Directors. The Board of Directors inspects the implementation status of these basic policies at the end of every fiscal term and revises any specifics of the policies as needed.

In fiscal 2010, the Company conducted an evaluation of internal control over financial reporting, according to the internal control reporting system as prescribed by the Financial Instruments and Exchange Law. This evaluation confirmed that internal control systems were operating effectively.

Under *APTSIS 15*, the new five-year mid-term management plan which started in April 2011, Mitsubishi Chemical Holdings Corporation (MCHC) is promoting the development of strategies for priority areas in global operations, targeting an overseas sales ratio of at least 45%. As part of this, MCHC established two wholly owned subsidiaries, setting up Mitsubishi Chemical Holdings America, Inc. in the United States in November 2010, followed by Mitsubishi Chemical Holdings (Beijing) Co., Ltd. in China in January 2011. These two subsidiaries have been assigned the role of representing MCHC as its public relations arm in the United States and China. They will develop and strengthen the management structure, building risk management and compliance structures, and providing management, supervision and guidance for internal audit structures. Through these overseas subsidiaries, MCC will further strengthen the efforts of internal control over MCC Group companies responding the local situations.

Taking into account the results of past evaluations of internal control system implementation and operating status, the Company will continue to conduct these evaluations with the aim of making them more efficient and effective. In addition, by improving internal control systems and standardizing procedures we will seek to raise procedural efficiency and promote rationalization.

Management Structure Compliance

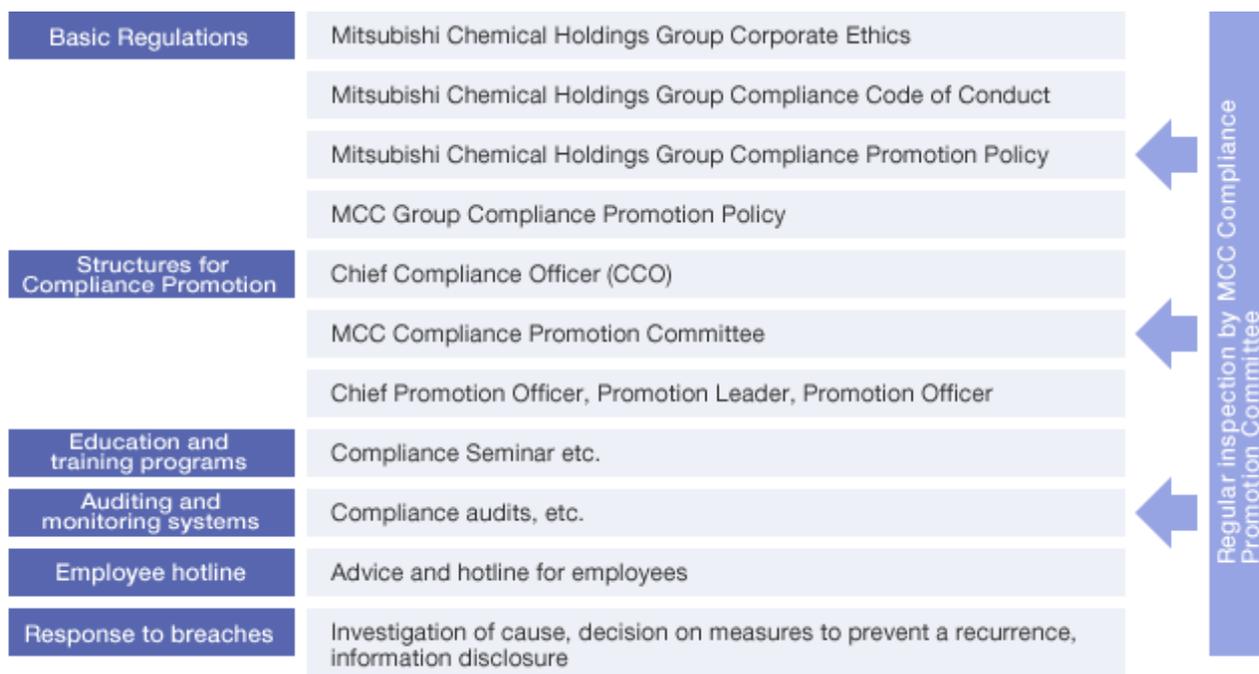
Compliance

Recognizing “Compliance” (compliance with laws and corporate ethics) as fundamental to business survival, the Mitsubishi Chemical Group is working to strengthen compliance as a top priority management issue.

Accordingly, the Mitsubishi Chemical Group has in place a Compliance Promotion Program for basic regulations, Structures for Compliance Promotion, education and training programs, auditing and monitoring structures and the employee hotline, and works to ensure that they are appropriately implemented and managed.

We will live up to the expectations of our stakeholders by providing valuable goods and services, while having a strong sense of corporate social responsibility and complying with social rules and regulations in our day-to-day operations.

● Compliance Promotion Program



Mitsubishi Chemical Corporation: MCC

Fostering compliance awareness

It is important to persevere with training and education to embed a compliance culture throughout the company.

In fiscal 2010, we continued to provide various training programs initiated in fiscal 2009. In particular, we focused on training for compliance promotion officers and group managers (GMs) at MCC and MCC Group companies, as well as independent e-learning training for employees.

To further promote compliance at overseas group companies, we teamed up with compliance promotion officers at our overseas business units to provide training in Chinese and English for a total of 389 managers at 38 subsidiaries in China, Taiwan, Singapore, Thailand, Indonesia and India.

Also to check the development of a compliance culture, we conducted our fifth compliance perception survey among employees of domestic group companies, receiving responses from 21,207 employees. Similarly, we conducted our second compliance perception survey among employees of overseas group companies using questionnaires prepared in Chinese, Indonesian and English, receiving replies from 1,656 employees. Our mandate has been to create a working environment that allows employees to speak freely, but the results of the fiscal 2010 compliance perception surveys showed that there is still room for improvement. We are determined to continue in our efforts to create a working environment that allows employees to speak freely in the future.



Overseas Training (India)



GM/Section Chief Training (Mizushima Plant)

Management Structure

Compliance

Basic Regulations

The Mitsubishi Chemical Group works to promote compliance based on compliance regulations shared by members of the Mitsubishi Chemical Holdings Group, such as [the Mitsubishi Chemical Holdings Group Corporate Ethics](#) and [the Mitsubishi Chemical Holdings Group Compliance Code of Conduct](#). 

Mitsubishi Chemical Holdings Group Corporate Ethics

We, constituent members of the Mitsubishi Chemical Holdings (MCHC) Group, shall share the following ethical standards and act with sound ethics and good common sense, and exert our utmost to ensure sustained development as a corporate group that engenders society's trust, in every aspect of our corporate activities.

1. Awareness and Responsibility

Based on the basic understanding that the foundation of our corporate activities is society's trust and confidence in us, we shall endeavor to contribute to the realization of an affluent and enriching society through respective business activities with a keen sense of corporate social responsibility.

2. Fairness, Equitability and Integrity

We shall respect the dignity and rights of all people and shall not engage in invidious discrimination for any reason whatsoever, be it racial, gender or religious. Furthermore, we shall deal with third parties including customers, suppliers, vendors, shareholders, business partners, administrative organs and local communities who associate with the MCHC Group, in a fair, equitable and sincere manner. The same holds true for relations among inter-MCHC Group constituent members.

3. Strict Compliance

Strict compliance constitutes the foundation as a member of society. "Never engage in unlawful activities," is a natural social norm (legal and ethical standards), which must be observed at all times.

At the MCHC Group, we shall act in accordance with the following standards in order to avert possible risks that may lead to illegality:

- (1) Continue to sharpen sensitivity toward illegal conduct.
- (2) Never engage in suspected illegal activity.
- (3) Do not be optimistic in evaluating risk of illegality.
- (4) In the event that an illegal act is committed, do not conceal or justify it.
- (5) Avoiding risk of illegality takes precedence over corporate interest at all times.

4. Prudence

With respect to inter-company or inter-group relationships, as well as relationships with our customers, vendors and business partners, we shall avoid improper associations and maintain proper relationships that conform to prevailing social standards, to prevent misunderstanding.

In particular, we shall make a clear distinction between official and private matters and shall not exploit one's position or status as a member of the MCHC Group to pursue one's own personal interests in any business activity.

5. Transparency and Openness

Recognizing the importance of accountability in corporate activities, we shall maintain transparency in our corporate activities and proactively disclose appropriate information to uphold "openness" within and without the Company.

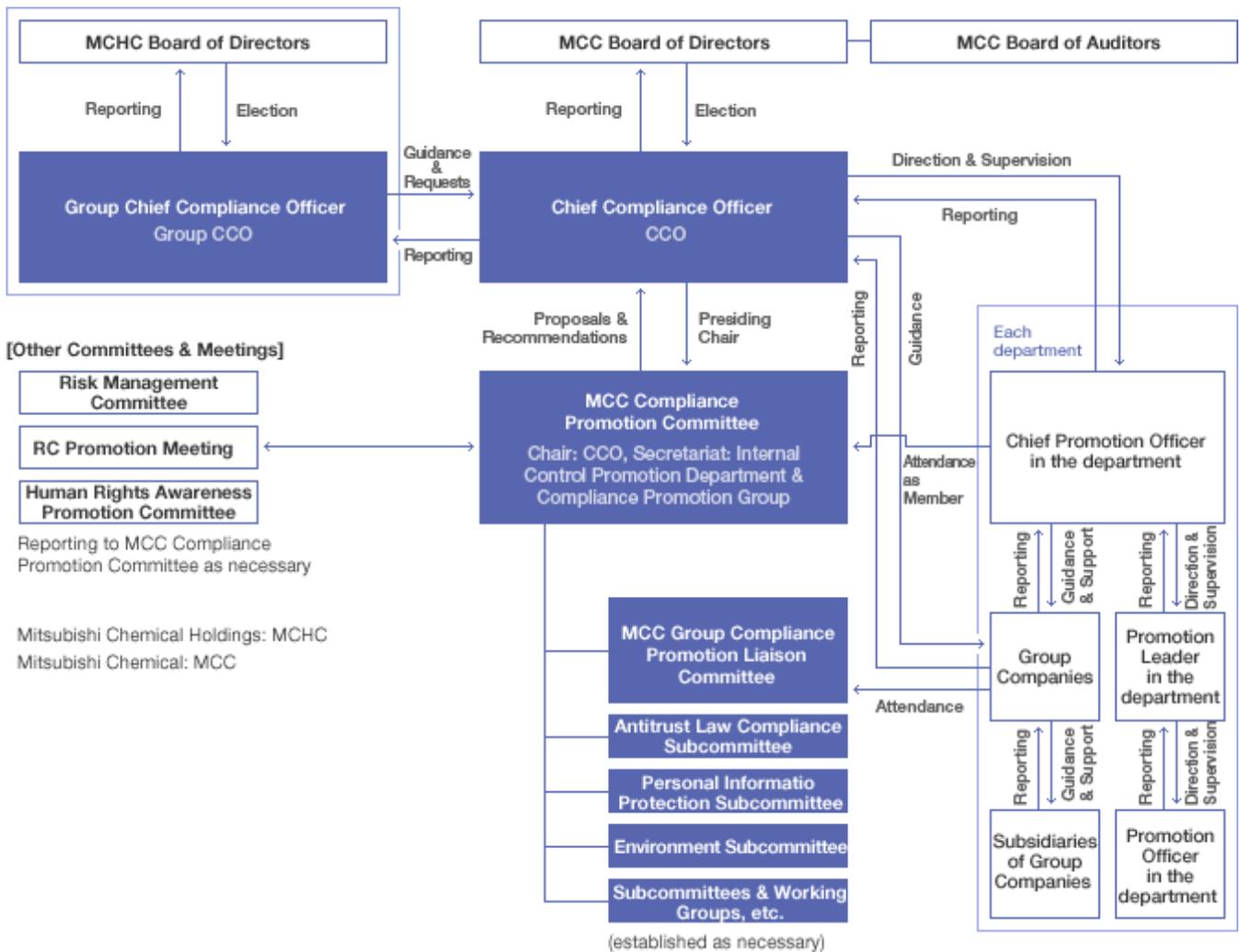
Promotional Structures

The Board of Directors of Mitsubishi Chemical Corporation (MCC) appoints the Chief Compliance Officer (CCO) for the Mitsubishi Chemical Group (MCC Group). The CCO has the authority to direct and supervise MCC departments and Group companies in matters relating to compliance, and chairs the Compliance Promotion Committee. The CCO also provides reports and explanations to the Board of Directors and others inside and outside MCC on any compliance issues faced by the MCC Group.

The Compliance Promotion Committee deliberates on matters such as the basic policy for development and operation of the MCC Group's [Compliance Promotion Program](#) and the performance of the program. It also makes necessary proposals and recommendations to the CCO. Chief promotion officers, promotion leaders, and promotion officers who are responsible for promoting compliance in each department on a daily basis are also nominated and appointed. The performance of their own department is evaluated from the perspective of ensuring and promoting compliance.

In fiscal 2010, the MCC Group appointed chief promotion officers and promotion officers at each Group company in Asia and also assigned a promotion leader to each country to promote compliance at overseas Group companies. The MCC Group also participated in the Overseas Internal Control Promotion Meeting held by Mitsubishi Chemical Holdings to ascertain the status of compliance at its overseas Group companies.

● Compliance Promotional Structures of the Mitsubishi Chemical Group



Chief Compliance Officer (CCO)

The CCO is elected by a resolution of MCC’s Board of Directors, and must report to the Board of Directors and the CCO of MCHC.

Mitsubishi Chemical Compliance Promotion Committee

The Compliance Promotion Committee deliberates on matters such as the basic policy for the Compliance Promotion Program, the performance of the program, action taken in the event of a compliance violation, as well as the preparation, amendment and abolition of regulations. It also makes proposals and recommendations to the CCO. The CCO takes action as necessary based on the Compliance Promotion Committee’s proposals and recommendations.

Chief Promotion Officers, Promotion Leaders, Promotion Officers

Every department of MCC has the chief compliance promotion officer, the compliance promotion leader, and the compliance promotion officer. Their job is to ensure and promote compliance within their respective departments.

Management Structure

Compliance

Supervision & Reporting

Auditing & Monitoring Structures

The Audit Office of Mitsubishi Chemical Corporation (MCC) gains an understanding of the status of compliance at individual business units by conducting an annual Control Self Assessment (CSA), in which it questions each of MCC's departments, offices, branches, branch offices, and Group companies about compliance.

The Mitsubishi Chemical Group has also been conducting a Compliance Perception Survey among employees of MCC and domestic Group companies once a year since fiscal 2006, and a Compliance Perception Survey among employees of overseas Group companies once a year since fiscal 2009, to gain an insight into their actual compliance culture, employees' awareness and views of compliance, and the development of compliance awareness.

Employees' Hotline

In fiscal 2002, the Mitsubishi Chemical Group established an employees' hotline, providing employees with a way to contact the Internal Control Promotion Department General Manager or an outside lawyer to seek advice or report possible compliance violations. The Group has since been working to ensure that the hotline is operated properly and employees know about it.

Anyone seeking advice or reporting a possible compliance violation is assured that that the information they provide will be treated confidentially, they will not be subjected to disadvantageous treatment, and their privacy and human rights will be protected. An investigative team led by the Internal Control Promotion Department General Manager act upon the information provided. Any problems identified are dealt with and resolved promptly under the direction of the [Chief Compliance Officer \(CCO\)](#) . In fiscal 2010, the hotline received 44 reports and inquiries, of which 10 were labor-related, 13 were working environment-related, 10 were legislation-related and 11 related to other matters.

MCC is committed to making the hotline user-friendly, using a toll free hotline number and surveying people who have used the hotline some time afterwards to check that they been properly protected.

Response to Compliance Violations

In the event of a compliance violation, an appropriate initial response is made to rectify or otherwise deal with the situation. In addition, an investigation to determine the cause of the violation is carried out and efforts to prevent a recurrence are made. Any employee who has committed a compliance violation is dealt with as necessary, possibly with disciplinary action in accordance with the Employee Work Regulations or other relevant regulations of the MCC Group Company to which the employee belongs. If it is deemed necessary to prevent a recurrence of the compliance violation, the CCO may disclose facts of the violation and details of the disciplinary action within the Mitsubishi Chemical Group, on condition that the privacy and human rights of the person subject to disciplinary action are protected.

Basic Policy

In May 2006, the Mitsubishi Chemical Group (MCC Group) implemented the Mitsubishi Chemical Group Risk Management Policy based on the Mitsubishi Chemical Holdings Corporation (MCHC) Group Risk Management Basic Policy. The purpose of this policy is to prevent major risks associated with business activities and to minimize damage should such risks materialize, so that the MCC Group can fulfill its social responsibility and bolster its corporate value.

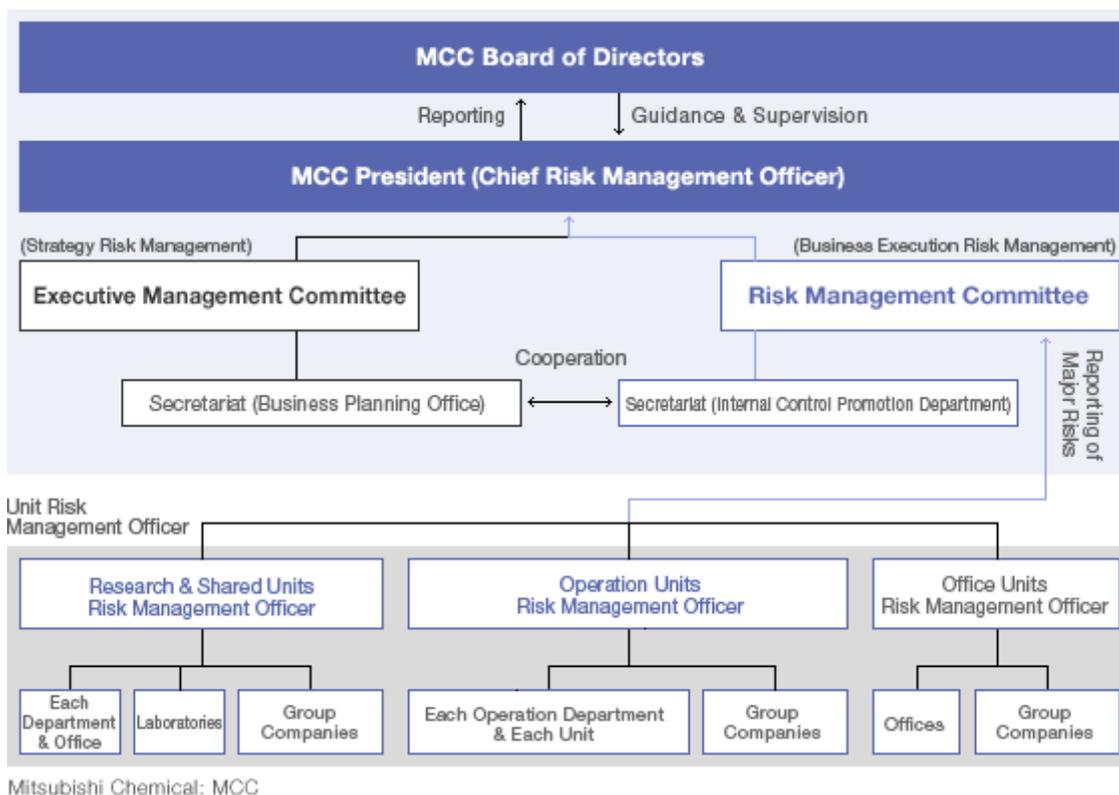
Risk Management Structures

The Mitsubishi Chemical Group has built a risk management structure headed by the President as Chief Risk Management Officer. The Chief Risk Management Officer is responsible for developing the Mitsubishi Chemical Group Risk Management System and ensuring that it operates and manages risk effectively, thereby helping maintain and enhance the corporate value of the entire Group. Meanwhile, Executive Officers in charge of research, production, operations, technology and other departments operate and develop the risk management systems of their assigned departments or Group companies, and provide them with guidance and support on risk management.

The Risk Management Committee, established to assist the Chief Risk Management Officer, meets once a year, in principle, and is also convened whenever necessary. The Risk Management Committee, comprising the Chief Risk Management Officer, executives responsible for unit risk management and Corporate Auditors, deliberates important matters relating to the development and operation of the Mitsubishi Chemical Group's risk management system, management targets for major risks, risk control measures, and other matters related to risk management. The Risk Management Committee also reports progress in these activities to MCC's Board of Directors and MCHC's Chief Risk Management Officer on a regular basis.

The Risk Management Committee also monitors the development and operation of risk management systems at each MCC Group company and, if it identifies any risk factors that should be shared with other Group companies, it urges Group companies to eliminate or mitigate such risk factors.

● Risk Management Structure of the MCC Group



Identification of Major Risk

At least once a year, each of Mitsubishi Chemical Corporation's units and Group companies identify and assess the risks they are facing and introduce risk control measures to continue to strengthen risk management.

Risks are identified in three categories – external risks from sources like natural disasters, market trends and the legal and regulatory environment; business process risks from sources such as production, financing, and marketing activities; and internal risks from sources like governance and human resource factors. Each risk is then assessed in terms of impact, for example, financial loss, human loss, or loss of public trust, and in terms of frequency of occurrence.

Additionally, in fiscal 2010, risks which, were they to materialize, would seriously impact on the Mitsubishi Chemical Group were extracted from risks identified by management as priorities for the MCC Group and risks that ought to be addressed given the social situation, and the Risk Management Committee confirmed the details of these risks and risk control measures. These were also reported at the management meeting of Mitsubishi Chemical Holdings.

In fiscal 2011, the MCC Group will continue to develop its risk management system and ensure its stable operation. The Group will also work to mitigate the key risks facing the MCC Group by taking action for compliance, overseas business expansion, raw material procurement, product supply, the transportation of hazardous materials, and other areas, and by implementing specific control measures for these risks.

Formulation of Business Continuity Plans (BCPs)

Mitsubishi Chemical Corporation endeavors to formulate business continuity plans for continuing or quickly restoring operations and minimizing negative impacts on customers and business partners in the event risk becomes a reality, for example, in a natural disaster or other major calamity.

In fiscal 2007, we began formulating our BCP based on model products whose production would be threatened by the impact of a major earthquake in Japan's Tokai or Tonankai regions. In fiscal 2008, responding to the international standardization of BCP and demands from customers, BCP preparation guidelines were created, establishing basic ideas on the Mitsubishi Chemical Group's requirements for BCP preparation.

At the same time, we also drew up a manual of countermeasures to minimize damage in the event of an earthquake with its epicenter in the Tokyo metropolitan area or a new influenza pandemic, and formulated BCPs to enable departments to continue important operations during such a crisis. At the time of the pandemic outbreak of a new type of influenza (A/H1N1) in the spring of 2009, we set up a task force and took action in accordance with the manual of countermeasures we had prepared. These included gathering and conveying information on employees' health issues and other information to facilitate the execution of operations, and limiting overseas business travel.

At the time of the Great East Japan Earthquake in March 2011, we based our response on the manual we had prepared for a Tokyo earthquake. Our task force at head office coordinated our response and each department played its assigned role to understand the extent of the damage and support the recovery of affected areas at MCC and Group companies. Based on the lessons we learned about systems for confirming employee safety and contacting employees in the Great East Japan Earthquake, we are revising our assumptions of the extensive damage that would be caused if an earthquake were to hit central Tokyo or the Tokai region as predicted in the future, and overhauling our BCP accordingly. Through these revisions, we are ensuring that, even in the event of disaster, our head office will continue to function, enabling us to discharge our responsibility to maintain supplies of products which, if interrupted, would have a major social impact, such as supplies of products to vital service providers.

Management Structure

Intellectual Property Management

Intellectual Property Protection and Prevention of Infringements

Mitsubishi Chemical Corporation (MCC) will endeavor to develop innovative technologies, products and services and obtain intellectual property rights and commercialize them. In this process, we are taking steps to avoid infringing on intellectual property owned by other parties, including patents, utility models, designs, trademarks and copyrights, while legally protecting MCC's intellectual property.

[▶ To Intellectual Property page.](#) 

Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

Responsible Care Activities

Responsible Care (RC) Activities

Basic Approach

In our role as a chemical corporation group with established business bases within Japan and abroad and supplying diverse materials, products and systems to a wide range of industries, stably supplying products and ensuring their quality and safety, offering safe and hygienic work environments and promoting businesses with lower environmental load are among our most important social responsibilities.

Based on this philosophy, the Mitsubishi Chemical Group has participated in Responsible Care (RC) activities, which are self-initiated activities by the chemical industry for ensuring environmental conservation, health, and safety, since the foundation of the Japan Responsible Care Council in 1995. The five mainstay activities are process safety and disaster prevention, occupational safety and health, environmental preservation, quality assurance and chemical safety. By conducting activities that conform to the Mitsubishi Chemical Group RC Promotion Policy, we aim to build relations based on trust with the public and help in developing a sustainable society.

Mitsubishi Chemical Group RC Promotion Policy

1. **Environment and safety are core focuses of our business activities** [Find out more](#)
2. **Committed to customer confidence and quality assurance** [Find out more](#)
3. **Targeting zero accidents and workplace injuries** [Find out more](#)
4. **Working to minimize waste and harmful chemical substance emissions** [Find out more](#)
5. **Working to conserve resources and energy** [Find out more](#)
6. **Developing technologies and products that contribute to the environment and safety** [Find out more](#)
7. **Working to strengthen our public reputation** [Find out more](#)

Mitsubishi Chemical Group companies promoting RC Activities*

© denotes subsidiaries of Mitsubishi Chemical as stipulated by the Japanese Companies Act, for which the Group performance data are collected and published in this CSR report.

○ denotes (overseas) subsidiaries of Mitsubishi Chemical as stipulated by the Japanese Companies Act, which are outside the scope of Group performance data collection and publication in this CSR Report.

Unmarked companies indicate those outside the scope of Group performance data collection and publication in this CSR Report.

* To further ensure promotion of Responsible Care (RC) activities, among domestic and overseas Mitsubishi Chemical Group companies, principally companies with operating divisions that handle chemical products participate as Mitsubishi Chemical Group companies promoting RC Activities.

Performance products domain

- ◎Shinryo Corporation
 - Chuo Rika Kogyo Corporation
- ◎Nippon Kasei Chemical Co., Ltd.
- ◎Nippon Synthetic Chemical Industry Co., Ltd.
 - Frontier Carbon Corporation
- ◎Mitsubishi Chemical Analytech Co., Ltd.
- ◎Mitsubishi-Kagaku Foods Corporation
- ◎Mitsubishi Kagaku Media Co., Ltd.
- ◎Yuka Denshi Co., Ltd.
- Tai Young Chemical Co., Ltd.
- Tai Young High Tech Co., Ltd.
- Mitsubishi Kagaku Imaging Corporation
- Mitsubishi Chemical Infonics Pte Ltd.
- Resindion SRI

Healthcare domain

- ◎API Corporation
- ◎Mitsubishi Chemical Medience Corporation

Industrial materials domain

- ◎Echizen Polymer Co., Ltd.
 - Kashima-Kita Joint Electric Power Corporation
 - Kashima Motor Co., Ltd.
 - Kawasaki Kasei Chemicals Ltd.
- ◎Kansai Coke and Chemicals Co., Ltd.
 - San-Dia Polymers, Ltd.
 - J-Plus Co., Ltd.
 - TM Air Co., Ltd.
- ◎Japan Polychem Corporation
 - Japan Unipet Co., Ltd.
 - Mitsubishi Engineering-Plastics Corporation
 - Yupo Corporation
- APCO (Suzhou) Co., Ltd.
 - Sam Nam Petrochemical Co., Ltd.
- Sunprene (Thailand) Co., Ltd.
 - Sam Yang Kasei Co., Ltd.
- Ningbo Mitsubishi Chemical Co., Ltd.
- Beijing Ju-Ling-Yan Plastic Co., Ltd.
- Pt. Mitsubishi Chemical Indonesia
- Mitsubishi Chemical Performance Polymers, Inc.
- MCC PTA India Corporation Private Limited
- MCC Advanced Polymers (Ninbo) Co., Ltd.

Others

- ◎Mitsubishi Chemical Engineering Corporation
- ◎Mitsubishi Chemical Group Science and Technology Research Center, Inc.
- ◎Mitsubishi Chemical High-Technica Corporation
- ◎Mitsubishi Chemical Logistics Corporation
- ◎Rhombic Corporation
- Mitsubishi Chemical USA Inc.

Responsible Care Activities

RC Management

Responsible Care (RC) activity promotion organization

The Mitsubishi Chemical Group RC Promotion Committee meets annually, chaired by the president of Mitsubishi Chemical with operating officers in charge of research, manufacture, operations, and common divisions participating. The meeting examines and finalizes RC activity plans for the entire Group and confirms the progress in the plan-do-check-act (PDCA) cycle for RC activities.

Based on the [activity policies and plans](#) finalized at the meeting, divisions of Mitsubishi Chemical and Group companies develop activity plans fitted to the type and description of their businesses and conduct RC activities.

● RC activities of the Mitsubishi Chemical Group

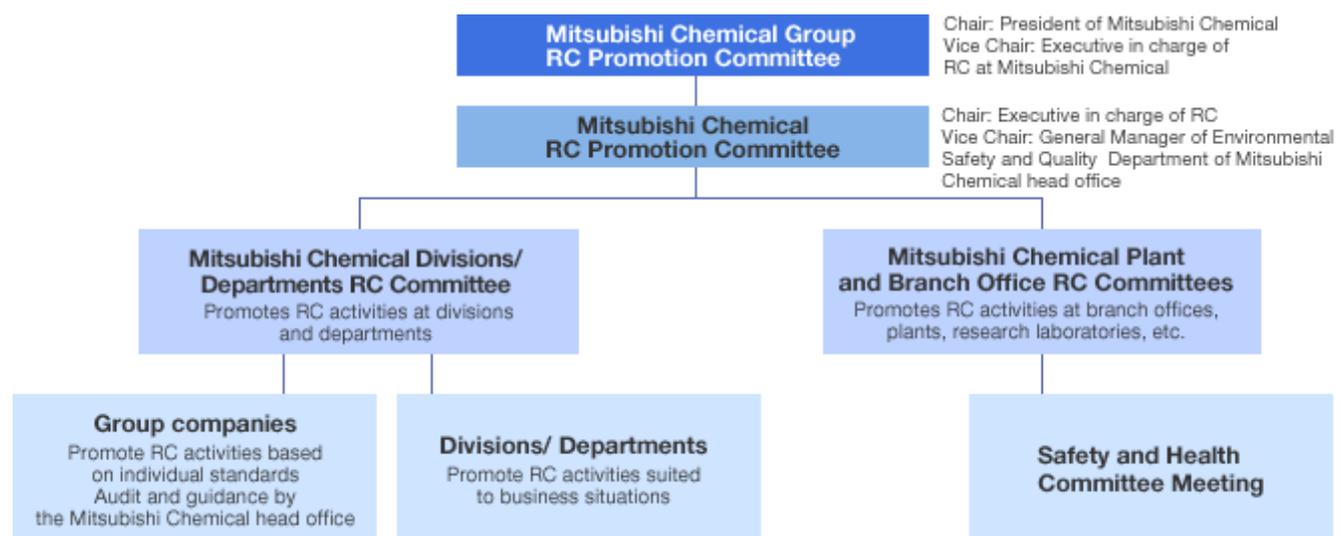


RC activity promotion organization of Mitsubishi Chemical and the Mitsubishi Chemical Group

The Mitsubishi Chemical RC Promotion Committee, chaired by the executive in charge of RC and bringing together the heads of manufacturing, research, sales, operations, common divisions, and other areas, meets annually to examine and finalize the outcomes of activities based on the fiscal year's RC Activity Policy, along with policies for the next fiscal year. All locations and divisions develop their own RC activity plans pursuant to the Mitsubishi Chemical RC Activity Policy, and then execute them.

The annual Mitsubishi Chemical Group RC Promotion Committee meeting, chaired by the President of Mitsubishi Chemical, examines and finalizes the Mitsubishi Chemical Group RC Activity Policy. The Mitsubishi Chemical RC Promotion Committee examines and finalizes the draft of the RC Activity Policy brought before the Mitsubishi Chemical Group RC Promotion Committee.

RC promotion organization at Mitsubishi Chemical and the Mitsubishi Chemical Group



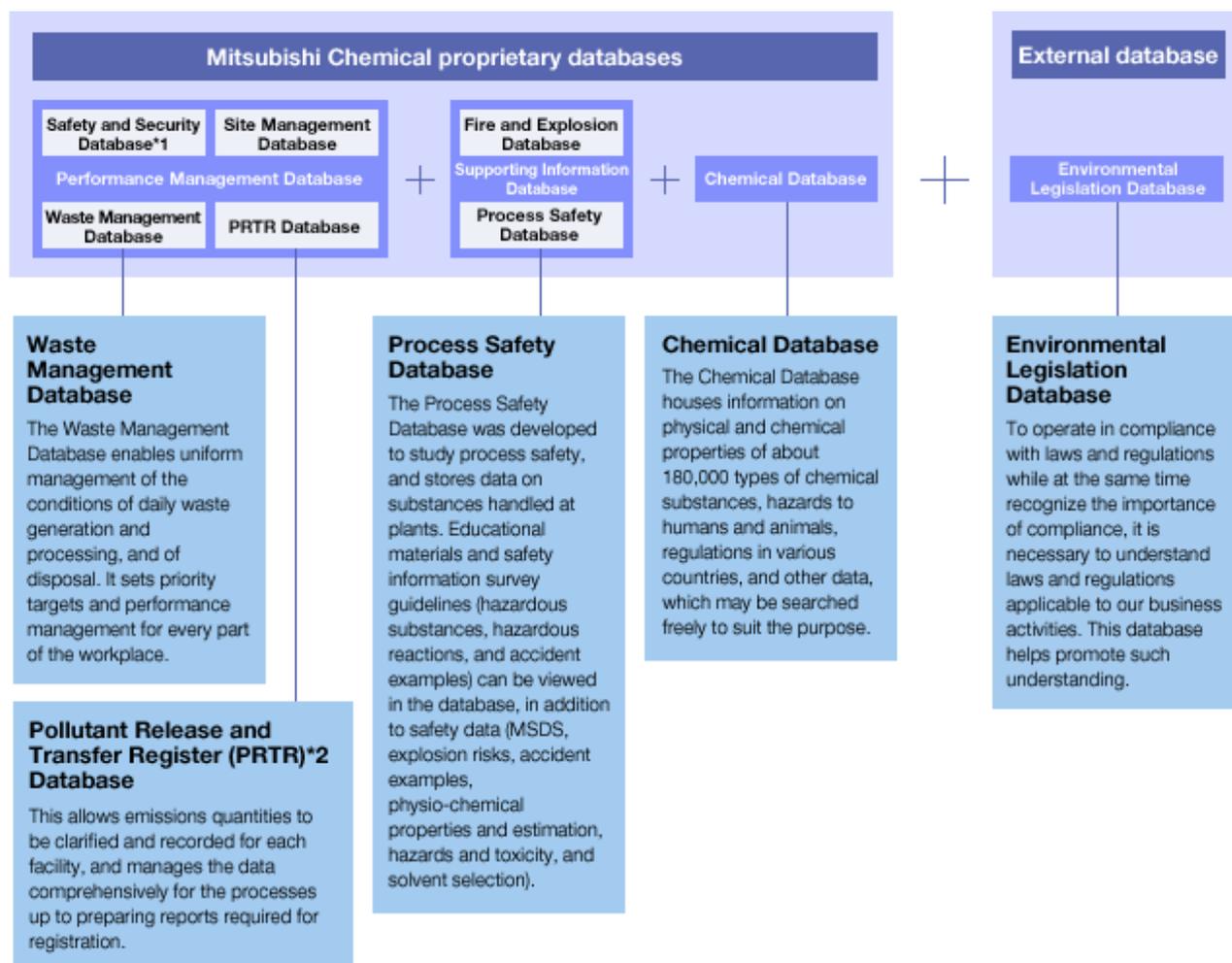
RC activity promotion organization of Group companies

Group companies have established organizations tailored to their business activities, and charged with efficiently promoting RC activities along with Mitsubishi Chemical. Mitsubishi Chemical conducts regular audits to confirm progress in activities at Group companies and to provide advice.

Developing databases for environmental conservation, safety and security

Mitsubishi Chemical configures the Environmental Protection and Safety Database as a system to support RC activities. Information related to RC is shared and managed using a database at each stage from product development to manufacturing.

● Environmental Protection and Safety Database



*1 Database: DB

*2 Pollutant Release and Transfer Register (PRTR): a system of notification on the released and transferred amount of chemical substances—to clarify, aggregate, and publicize data on the quantity hazardous chemical substances released into the environment and from individual sources, or carried outside of facilities as part of waste materials.

RC audit

Mitsubishi Chemical conducts RC auditing at each facility and division engaged in manufacturing, research, and operations of Mitsubishi Chemical and Group companies.

During fiscal 2010, the Environmental Audit Office was established in June 2010 within the Environmental Safety and Quality Department of Mitsubishi Chemical head office, as part of recurrence prevention measures for the inappropriate data processing incident during fiscal 2009 involving environmental analysis data at the Yokkaichi Plant. This was done for the purpose of intensifying audit functions with respect to environmental management. Comprehensive audits were also conducted, even for slips issued over the course of the past three years, to confirm that all domestic plants and research laboratories of Mitsubishi Chemical and Group companies have conducted appropriate environmental management.

As the result, the audit revealed about 200 flaws in management aspects such as in-house regulations and methods of recording analyzed data, as well as organizational and other areas. Advice on improvement was promptly provided. During fiscal 2011, we plan to continue with comprehensive environmental audits, and to monitor improvements in the flaws pointed out during fiscal 2010.

Promoting Priority Measures for Zero Facility-Related Accidents

Recognizing that safety is the foundation of corporate activities, Mitsubishi Chemical undertakes safety activities that aim to achieve zero facility-related accidents. In fiscal 2010, as set forth in the *APTSIS 10* mid-term management plan, and under a policy of reaffirming a safety-first awareness for production divisions, efforts were made to prevent accidents, such as full implementation of prevention measures against recurring accidents and trouble, and the announcement of specific measures that set near-misses and trouble as leading indicators.

Fiscal 2011 marked the start of the *APTSIS 15* mid-term management plan. From fiscal 2011, a new target of boosting awareness among professionals on the frontlines of production sites was added for attaining zero facility-related accidents, along with conventional targets to improve systems to prevent recurring accidents and serious trouble and implementing measures to prevent them, so that they will take hold in the consciousness of our workers.

Priority measures implemented in fiscal 2010

The following measures were implemented comprehensively and companywide for the purpose of maintaining zero facility-related accidents.

1. Comprehensive, companywide implementation of recurrence prevention measures for accidents and trouble

(1) Facilities: improvement targeting more effective safety measures

Verification was made on whether safety measures that were implemented to prevent the recurrence of accidents and trouble are effective, and whether measures against accidents and trouble implemented in the past have retained their efficacy.

(2) Management: revisions to make standards persuasive and unified, and making ourselves proficient with them

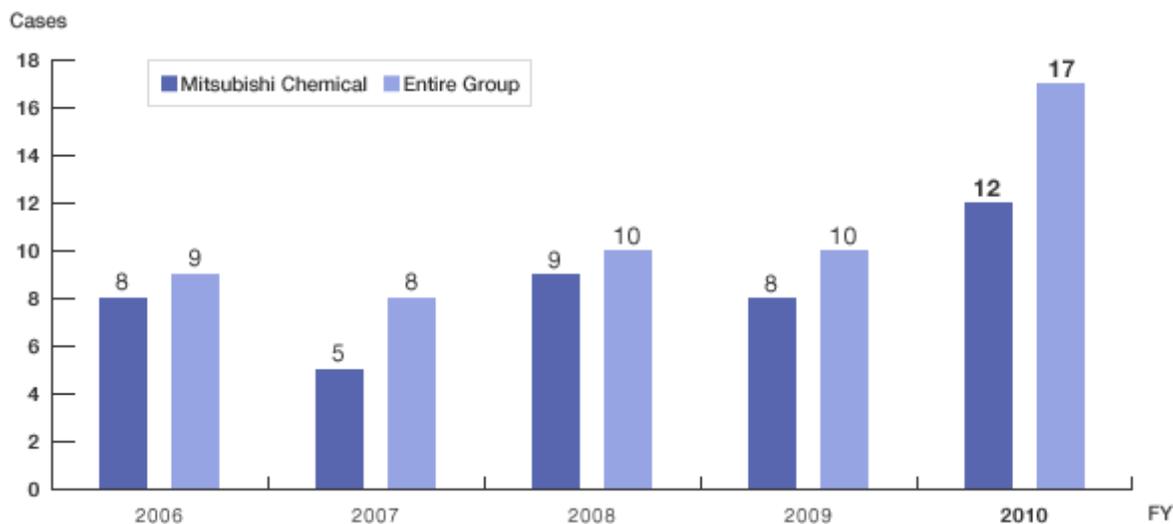
The standards were organized systematically, in addition to making a series of revisions to safety standards that need to be unified companywide. Application of the revised standards began at all plants.

(3) Confirmation on measures: practical RC review

Concerning the establishment of standards for safety measures and their operation status, along with the execution of measures, the review not only looked at progress at plants, but also examined the details and efficacy, to fully execute the planned measures.

2. Developing specific measures using near-misses and trouble as leading metrics

● Number of facility-related accidents



Increasing the safety of processes, facilities, and work procedures by developing SA and SR activities

When starting to manufacture new products or improve existing processes, the Mitsubishi Chemical Group conducts safety assessments (SA) on manufacturing methods and processes at each stage of development, construction, and operation.

For facilities and work procedures with existing processes, Safety Review (SR) instructors¹ plants have evaluated potential risks comprehensively, systematically and continuously since 2003 to promote SR that further increases safety.

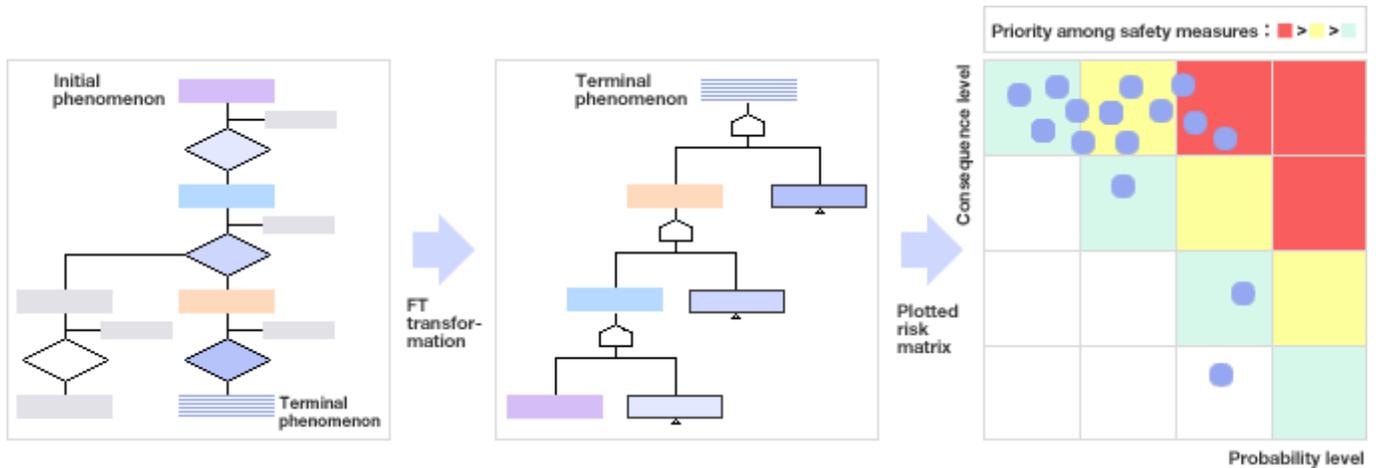
One of the evaluation methods used is HAZchart analysis, developed jointly by Mitsubishi Chemical and Mitsubishi Research Institute, Inc. This is an evaluation method that enables process designers and those in charge to use at worksites and make decisions based on quantitative findings. It facilitates processes from accident scenario formulation to quantitative evaluation, allows worst-case scenarios to be easily assumed, enables common factors and phenomena to be easily handled, and offers a host of other features. By using supporting software, anyone can easily conduct safety evaluations.

HAZchart analysis is currently being used at Mitsubishi Chemical in times of large-scale reform or establishment of plants with potential risks such as fire, explosion or leakage of toxic substances, and also at times of process safety review (total checking on process safety) at existing plants.

In fiscal 2010, the supporting software was significantly improved to make the tool even easier to use and understand. Taking the situation as an opportunity, efforts will be made to disseminate the analysis tool even further throughout the Mitsubishi Chemical Group. We are also considering commercialization of the software in the future as PHAOrganizer Ver. 3.

¹ SR instructors: Senior staff and engineers with ample knowledge and experience in processes and safety measures assume this role. Instructors take part in SR for all plants conducted at the establishment they are in charge of. They identify and extract risks and utilizing risk analysis methods they conduct objective risk assessment in order to support efforts to reduce risk.

● Flow of HAZchart analysis



Preparation of accident scenario using HAZchart → Transformation to FT² to calculate the occurrence probability → Results are plotted on the risk matrix for evaluation, based on which safety measures are formulated

² Fault tree (FT): Also referred to as a failure tree diagram, this is used for analyzing the causal relationship concerning accidents in systems and calculating occurrence probability.

Boosting plant reliability by sophisticating and disseminating fire- and explosion-prevention technologies

The Mitsubishi Chemical Group has established the Safety Engineering and Environmental Integrity Group within the Mitsubishi Chemical Group Science and Technology Research Center for enhancing existing technologies and measures related to safety.

The group works to sophisticate technologies for risk forecast of chemical substances, verification and process risk evaluation in order to prevent fire, explosion and leakage of harmful substances, in each phase from research and development (R&D) to manufacturing, transport, use and disposal of the product. At the same time, a safety technology database is being developed at the group and disseminated among all Mitsubishi Chemical Group companies.

The latest safety technologies and information are being used for enhancing plant reliability in R&D and SA and SR when a new plant is constructed or existing facilities are modified. If an accident or trouble occurs, the group investigates the causes from scientific viewpoints and proposes measures for recurrence prevention.

Process safety education also began in fiscal 2009 for the middle-tier workers of each plant. Lessons may be applied to safety evaluation on substances and plants with which participants are involved in daily work. Over 250 people participate in the seminar each year and have applied what they learned in their duties. Education will continue being given in order to strength the workforce's abilities.

Accident-prevention drills focusing on logistics safety

Along with Mitsubishi Chemical Logistics Corporation, Mitsubishi Chemical also works to prevent accidents in logistics processes. Accident prevention drills are conducted at least once a year at major logistics centers, assuming various logistics accidents. Issues revealed through the drills are addressed promptly in order to make improvements, thereby also establishing organizations that can smoothly handle emergency situations.



Drill assuming oil leakage from tankers

VOICE

Awarded 2010 Honorable Mention for Papers on Accident Prevention Measures with Hazardous Materials

Marika Higuchi

Special Solvent Department, Production Division 2, Mizushima Plant
Mitsubishi Chemical Corporation

I was assigned to a production site, and through the three-shift practical training³ that lasted for about five months I learned a great deal.

The paper that was awarded the 2010 Honorable Mention for Papers on Accident Prevention Measures with Hazardous Materials (hosted by the Hazardous Materials Safety Techniques Association) summarizes the safety activities addressed at the Special Solvent Department where I was given practical training. The specific topics discussed in the paper are thorough management of work procedure instructions (KY card) and utilization of work safety instructions. These two measures allow even workers with only a few years of experience to work independently, helping us to maintain plant safety and pass down technologies while increasing knowledge and sensitivity for duties assigned. The practical training deeply convinced me that safe and stable operations are vitally important for production divisions, thanks to the enthusiastic instructions by senior workers and detailed work procedure documents.

Unexpectedly, I was able to attend the awarding ceremony for the paper, which gave me the chance to speak with the Commissioner of the Fire and Disaster Management Agency and other people from outside the company. In my conversations I was able to learn about safety activities conducted outside our company, and reaffirmed that safety does not come naturally but is realized only by thoroughly managing risk. I intend to effectively utilize this experience to continue contributing to our society through manufacturing with a strong belief in safety first.

³ Three-shift practical training: workers work on three shifts at chemical plants, because they operate 24 hours a day. Three-shift practical training is training on operations given while taking part in the three-shift work duties.



With the Commissioner of the Fire and Disaster Management Agency (right)



Confirmation by pointing while calling out names

Cultivating safety culture at Kashima Plant

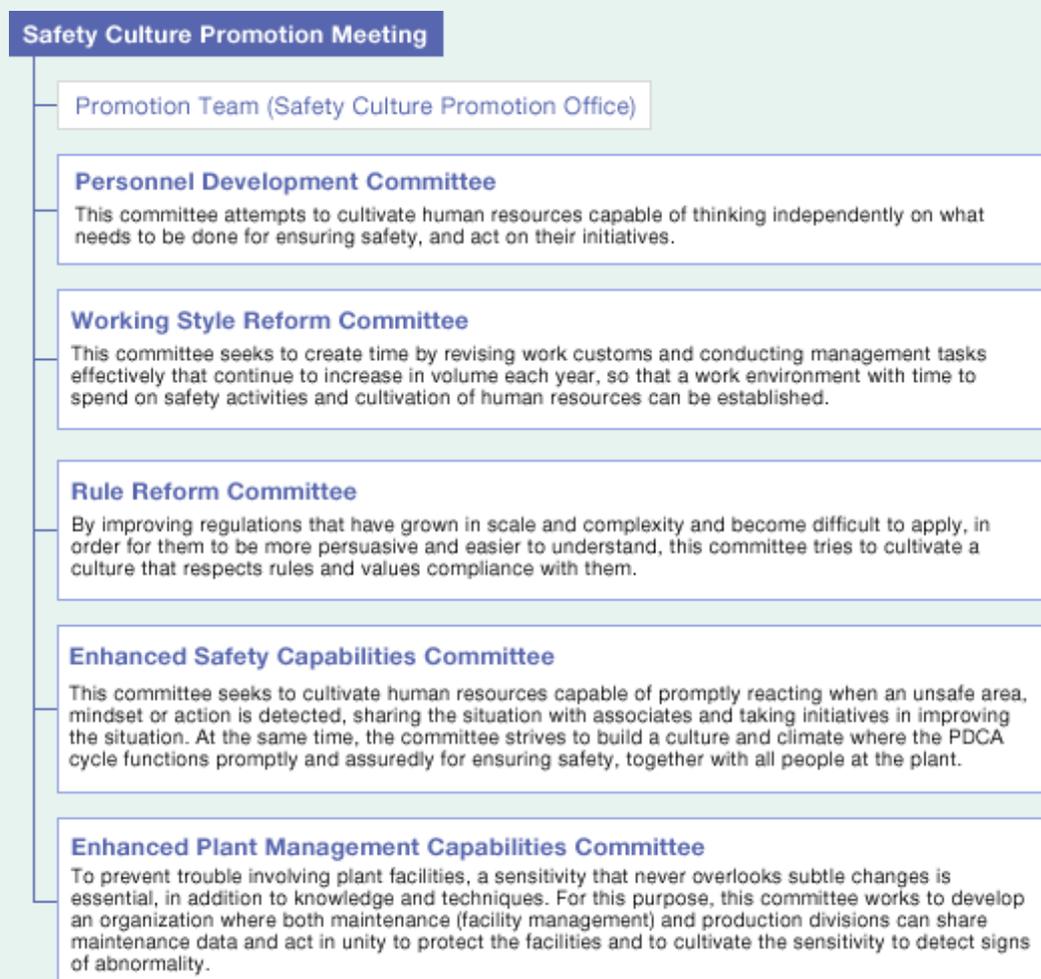
At Mitsubishi Chemical's Kashima Plant, thorough recurrence prevention measures against similar disasters are being implemented as a part of the lessons learned from a fire that broke out in December 2007. Initiatives have also begun for cultivating and disseminating throughout the plant a culture and climate that emphasizes safety, aiming to prevent all types of disasters and accidents.

Starting with identification and analysis of trouble and issues inherent in organizations and staff at the Kashima plant, we decided on what our ideal state would be. Five priority measures were formulated for realizing the ideal, for which efforts are being vigorously taken.

Implementation structure

Progress in activities for promoting safety culture is being confirmed at the Safety Culture Promotion Meeting (held every month) chaired by the plant manager. The Safety Culture Promotion Office supports various activities and strives to disseminate safety culture throughout the plant. The diagram below shows the organization for safety culture promotion.

● Five committees and the measures they implement



Specific activities and outcomes of each Committee for promoting safety culture

1. Personnel Development Committee

- Transferred part of the authority to approve construction safety instructions
- Reorganized each production department (greater independence for deputy manager)
- Reviewed the structure of the Production Department (established Technological Study Team)
- Formulated and implemented career plans for staff and foreman
- Set targets for duties of Managers and conducted evaluation

- Conducted evaluation on Managers' skills (management actions)

2. Working Style Reform Committee

- The following three priority measures have been promoted
 - (1) Promoted measures for time creation (e-mail, conferences, etc.)
 - E-mail reform: reducing e-mails to Managers and enhancing communication
 - Conference reform: reducing burdens on Managers at meetings and boosting production efficiency
 - (2) Continuing making small actions to improve efficiency
 - (3) Supporting each worker increasing work efficiency

3. Rules Reform Committee

- Configured more persuasive revision processes by having opinions and voices of employees and partner company workers reflected
- Making reviewed and improved rules that have grown in scale and complexity easier to use (rule reform situations: cases being studied - 75; cases resolved - 64)

4. Enhanced Safety Capabilities Committee

- Configured an improvement cycle of sensing, conveying, changing and confirming, and put the cycle into practical application
- Continued generating new wisdom to also be shared by future generations (know-why collection) from near-misses in work and construction
 - Number of near-misses submitted: 200-300 cases/month (first half of fiscal 2009) → 800-1,000 cases/month (fiscal 2010)
 - Number of awards to Section Managers: 10-20 per month (first half of fiscal 2009) → 30-50 per month (fiscal 2010)

5. Enhanced Plant Management Capabilities Committee

- Cultivating sensitivity that never overlooks signs of abnormality (implementing expert maintenance education, training based on examples, improvement in patrols, expert maintenance patrol, and other actions)
- Recognition of importance of maintenance data and sharing (facility and maintenance divisions jointly conducted facility review)
 - Number of abnormalities detected: 50-200 cases/month (first half of 2009) → 400-600 cases/month (fiscal 2010)
 - Number of awards to Section Managers: 5-10 per month (first half of fiscal 2009) → 20-35 per month (fiscal 2010)

▶ [To Mitsubishi Chemical Kashima Plant website \(Japanese only\)](#) 

Examination by Ibaraki Prefecture government

In July 2010, Ibaraki Prefecture government officers for the second time monitored the efforts of Kashima Plant to cultivate a culture of safety. The officers noted that our activities were excellent and should be continued. The sixth investigation (April 2009) by the Accident Analysis Committee was the final one, and periodical progress confirmation by the prefectural government began in July 2009. Mitsubishi Chemical will continue its commitment to cultivate a safety culture.



Monitoring by Ibaraki Prefecture officers

Responsible Care Activities

Occupational Safety

Raising Safety Awareness

To strengthen occupational safety measures, the Mitsubishi Chemical Group Accident Prevention and Safety Management Guidelines were formulated in 2005. The Guidelines address topics such as the importance of risk prediction, and management items during regular work¹ and non-regular work² with the purpose of eradicating labor accidents. In line with the Guidelines, our Group companies have revised their in-house regulations and standards. However, the Mitsubishi Chemical Group in recent years has not been able to achieve its target of a maximum of 0.1 loss time injury frequency³. The figures remain high in fiscal 2010, at 0.32 for Mitsubishi Chemical alone and 0.31 for the entire Group.

Of the loss time injury accidents occurring in the past five years, 53% were so-called behavioral accidents such as being caught and entangled, falls and drops, and 24% were chemical and thermal injuries distinctive in chemical plants. These two categories account for about 80% of all loss time injury accidents. They are attributed to lack of risk prediction in basic operations and body movements, as well as lack of communication when confirming instructions and conveying messages. The situation is believed to have resulted from a decline in practical abilities at worksites caused by the decreasing number of experienced workers.

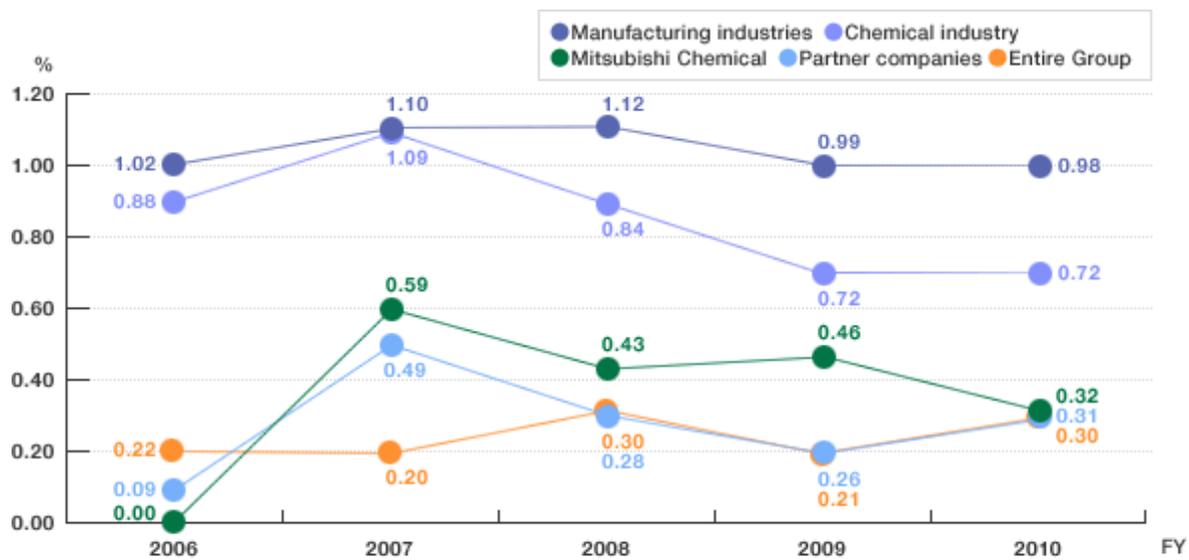
Given this situation, we have improved sensory training seminars (attended in fiscal 2010 by about 1,600 employees from the seven major plants and about 1,000 Group company employees) and *hatto-hiyari* activities, to enable workers to assuredly predict risks. Verification and sharing of accident information are also being promoted within the Group to use past examples effectively. Starting in fiscal 2009, minor labor accident examples are being shared within the Group along with important *hatto-hiyari* examples, so as to obtain accident information before the situation reaches a serious state, and to eradicate accidents at their initial stages.

¹ Regular work: Work performed repeatedly on an ongoing basis

² Non-regular work: Work that is rarely performed repeatedly on an ongoing basis

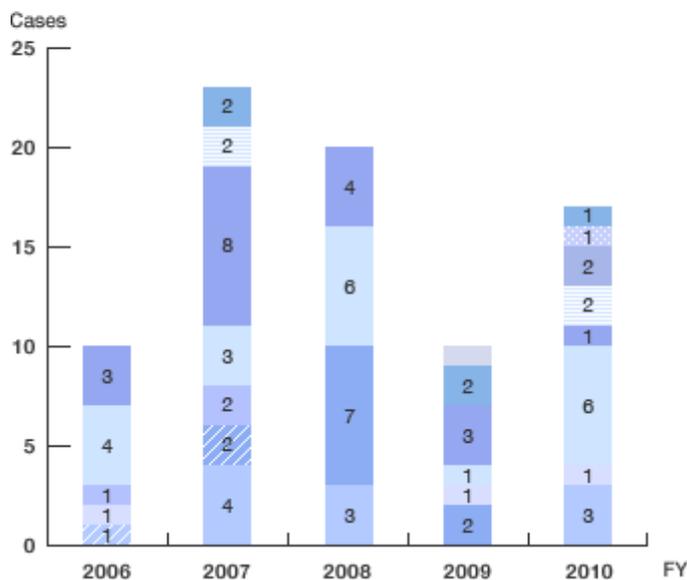
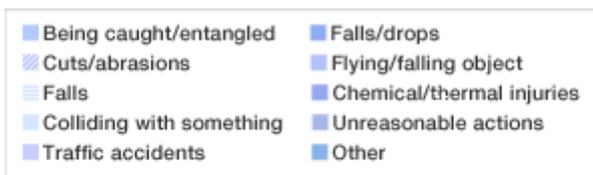
³ Loss time injury frequency: The number of casualties caused by loss time injury accidents that took place per 1 million total working hours

● Loss time injury frequency

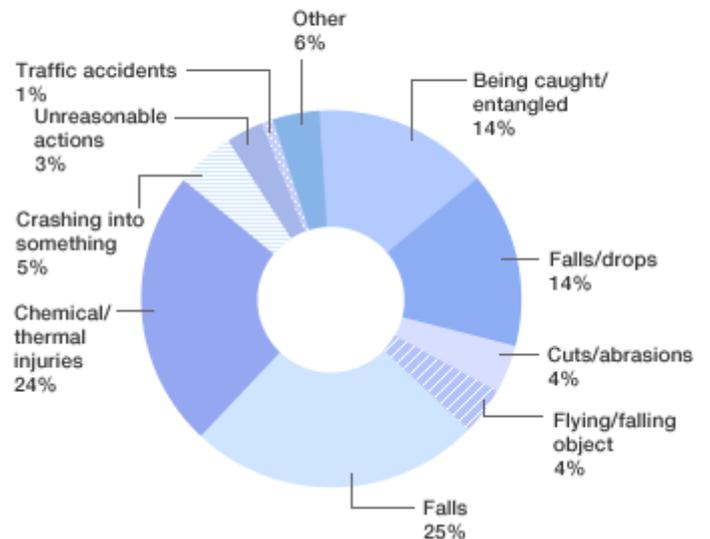


*Loss time injury frequency = $\frac{\text{Number of casualties in labor accidents}}{\text{Number of working hours}} \times 1,000,000$

● Categories of loss time injury accidents (Mitsubishi Chemical Group)



● Categories of loss time injury accidents (total for FY2006–2010; Mitsubishi Chemical Group)



*Accidents at overseas Group companies are also included in some cases

Thorough implementation of safety activities

Each Mitsubishi Chemical plant has traditionally established change management standards for tasks accompanying changes in production processes and safety and care standards for construction, maintenance, inspection and other tasks related to manufacturing facilities. In fiscal 2009, these were re-established as unified standards for the entire company. In fiscal 2010, the Mitsubishi Chemical Group Accident Prevention and Safety Management Guidelines and the unified standards were applied for the purpose of increasing accident prevention and safety.

Also, Responsible Care (RC) audit has been conducted since fiscal 2008, to confirm whether Group companies are appropriately conducting safety activities pursuant to guidelines and standards, and to help these attempts take root. During fiscal 2010, RC audits were conducted with given priority to plants that need improvements. The safety level for the entire Mitsubishi Chemical Group has improved through specific improvement measures and guidance on activities.

VOICE

All employees work together on the five safety activities

Hu Wei

Department Manager

Accident Prevention and Environmental Management Department, Accident Prevention and Environmental Management Division
Ningbo Mitsubishi Chemical Co., Ltd.



In 2010, Ningbo Mitsubishi Chemical conducted five safety activities under the spirit that people are the base of everything, and with all employees participating and maintaining mutual respect. The cooperative efforts of all employees resulted in Ningbo Mitsubishi Chemical recording zero accidents for two consecutive years. We are pleased with the result, but we should not relax our efforts. As the Department Manager of Accident Prevention and the Environmental Management Department, I will always be vigilant of risks, and continue to make efforts to completely eradicate unsafe factors while discussing issues with senior managers and associates for solving them. In this way, I hope to promote safety culture and further increase teamwork, making our company the best terephthalic acid plant, where people can work soundly and enjoyably, and with a sense of satisfaction.

Five safety activities at Ningbo Mitsubishi Chemical

1. Ensuring work safety by predicting risks and analyzing work safety
2. Increasing safety awareness by collecting accident example data
3. Increasing safety capabilities through education and drills
4. Improving working environment by implementing 5S activities
5. Creating safe workplaces through identification of local issues and making improvements

Responsible Care Activities

Occupational Health

Managing chemical substances properly in the working environment

Mitsubishi Chemical handles numerous chemical substances, including nanomaterials¹. To protect the health of employees who handle these substances in their duties, human health impact assessments are conducted in the workplace environment in each stage, from basic research to manufacturing, implementing necessary precautions.

Concerning conventionally handled chemical substances, we also carry out not only statutory workplace environment monitoring², but also voluntary monitoring and exposure (amount of chemical substances with which an individual comes into contact) measurements to suit the conditions in which chemical substances are handled, as a part of ongoing efforts to manage the workplace environment.

¹ Nanomaterials: materials in sizes of the order of one billionth of a meter

² Workplace environment monitoring: conducted for clarifying the amount of harmful factors existing in the workplace environment, and to what extent people working in the environment are exposed to them

Fostering emotional and physical health

Mitsubishi Chemical actively pursues activities for emotional and physical health.

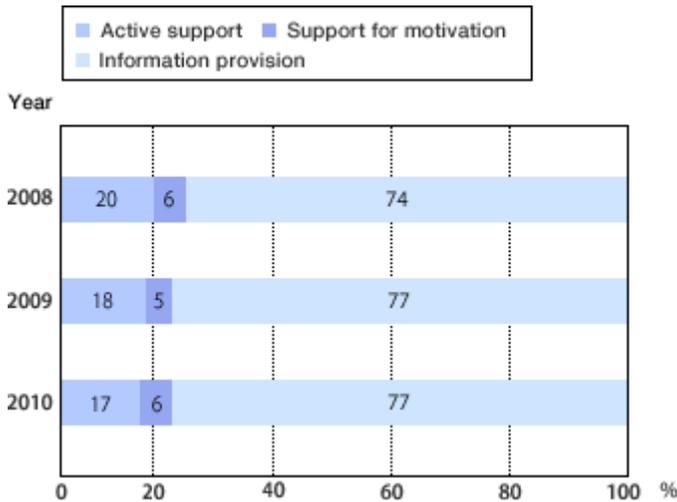
For maintenance of emotional health, training is being given to different tiers of employees on self-care and how to deal with subordinates who suffer from emotional disorders. The necessary training is given at each plant, while promoting a system where employees can feel free to consult with experts. For instance, at the head office, two commissioned physicians are available for consultation both during and outside working hours twice a week.

For physical health, we offer specific health guidance³ in response to a request by Mitsubishi Chemical Health Insurance Union, as a follow-up to the standard health examination that businesses are mandated to conduct.

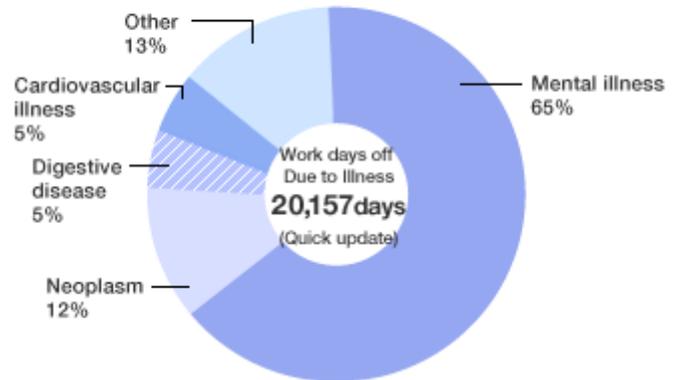
The details of counseling and results of health examination are managed carefully, taking the privacy of each employee into consideration.

³ Specific health guidance: examination and health guidance for preventing lifestyle-oriented diseases, with a focus on preventing and eliminating metabolic syndrome among the insured and their dependents aged 40 to below 75.

● Ratio of workforce reaching the specific health guidance (Mitsubishi Chemical)



● Work days off due to illness (2010, Mitsubishi Chemical)



VOICE

Report on activities by Industrial Hygiene Team of Mitsubishi Chemical Indonesia

Mr. Erwin
Personnel & Security Section Manager

Doctor Wahyu and Mr. Dwi
SHE Section Manager



Mr. Erwin Doctor Wahyu Mr. Dwi

PT. Mitsubishi Chemical Indonesia manufactures a raw material of synthetic fibers (purified terephthalic acid). Its Industrial Hygiene (IH) team puts forth proposals for improving the workplace environment to the Chairman of Safety, Health and Environment (SHE) Committee, to provide a comfortable and healthy workplace environment and to prevent occupational accidents and work-related illnesses. The IH team consists of representatives of each section, and promotes activities under the guidance of industrial physicians.

Since 2005, the IH Team has launched several projects for preventing work-related illnesses. One of these is the Noise Investigation Project (conducted in 2005 and 2006) for guarding workers from noise exposure that could impair hearing. In the project, noise levels in workplace were mapped and signboards were created showing noise levels and calling for workers to ensure they wear appropriate personal protective equipment in areas. Proposals were also made for redesigning facilities in order to reduce noise whenever applicable.

From 2006 to 2008, the Heat Stress and Illumination Project was launched to protect workers from thermal stress and dazzling lighting that could cause excessive eyestrain. The project led to standardization of temperature and lighting intensity in the work environment.

The Dust Investigation Project was also conducted in 2008-2010. Dust in the workplace was measured, calling for attention to its associated risks and urging workers to wear appropriate protective equipment in areas with the potential risk of lung disease. Proposals were also made to redesign facilities so as to reduce dust exposure whenever applicable.

The team is currently surveying from ergonomic aspects the risks inherent in daily behavior and work methods.

Responsible Care Activities

Environmental Management

Aiming to reduce the environmental load in all processes of business activities

Mitsubishi Chemical is proactive in seeking to protect the global environment. We strive to reduce the environmental load in all processes in our business activities by pursuing resource and energy conservation, reducing waste, and encouraging reuse and recycling, as well as conserving the environment and developing technologies for these purposes. In addition to preventing contamination associated with our business activities for the air, water, soil, and other natural features, we seek solutions to environmental issues on a global scale. Our efforts include measures to deal with global warming and resource depletion, preservation of biodiversity and development of environmentally friendly products and services.

Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

Responsible Care Activities

Preventing Air, Water and Soil Pollution

Preventing air and water pollution by improving environmental facilities and establishing a management structure

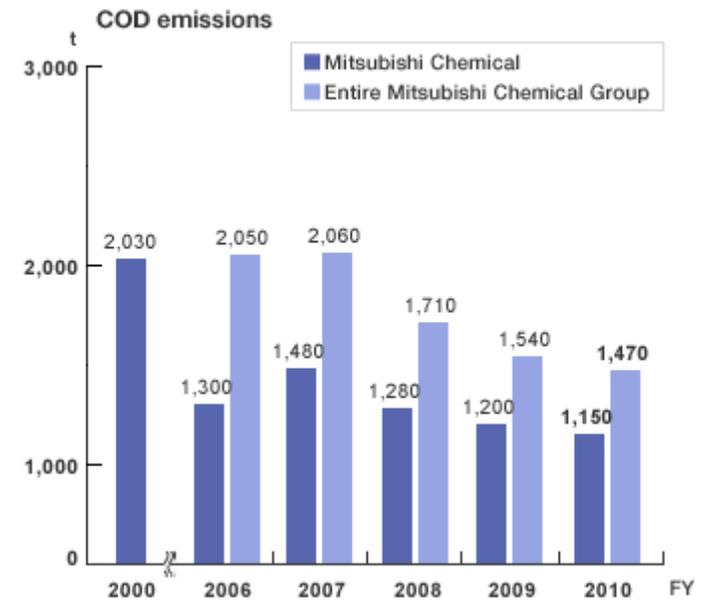
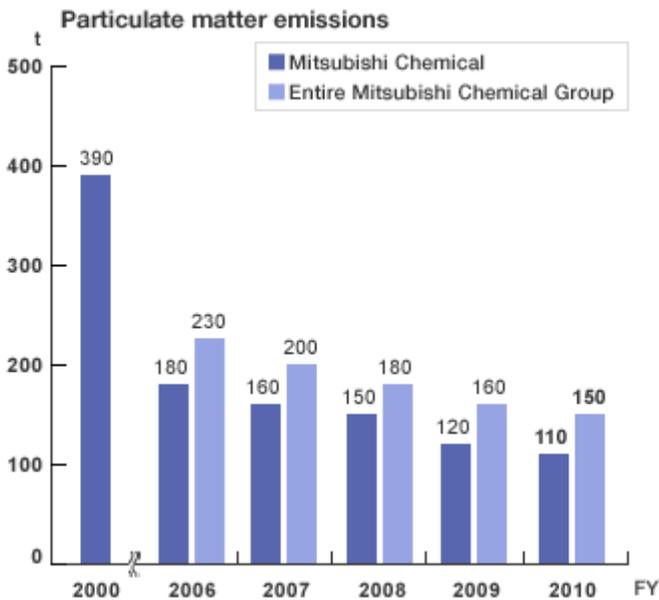
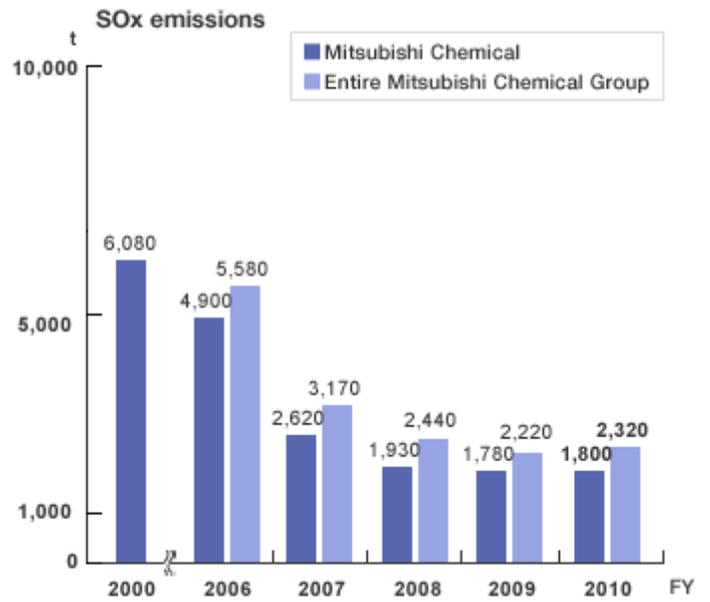
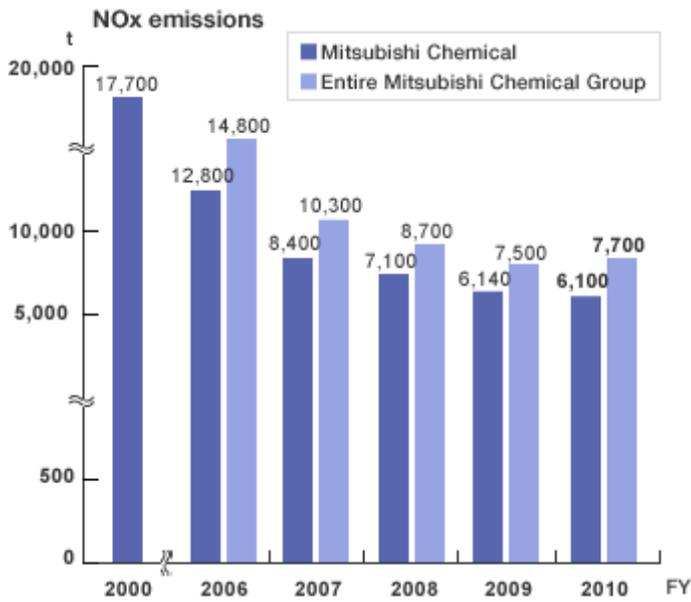
The chemical industries handle a wide range of chemical substances, and consume large quantities of fossil fuels that are sources of nitrogen oxide (NO_x), sulfur oxide (SO_x), and other pollutants. Because of this, the Mitsubishi Chemical Group has addressed environmental issues with the policy of “walking hand-in-hand with regional communities,” since 1968 when the Air Pollution Control Act and Water Pollution Control Act were enacted. By installing emission gas and drainage treatment facilities, we have slashed the environmental load on the atmosphere and public water bodies.

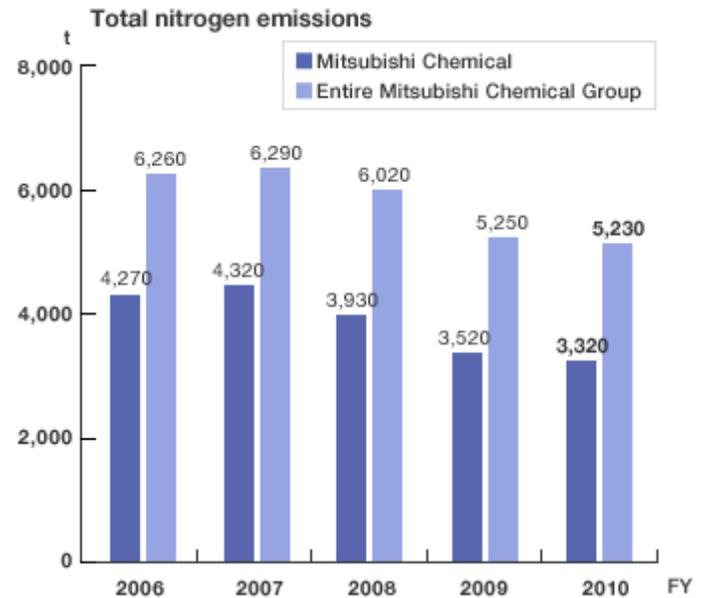
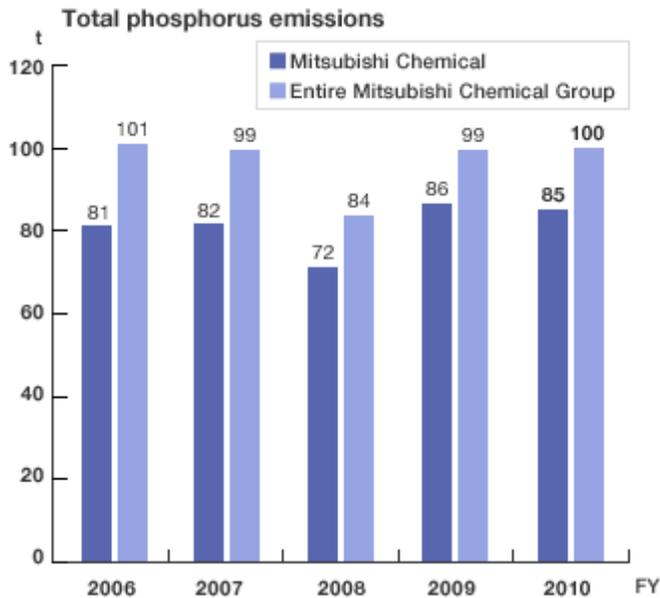
During fiscal 2010, a number of initiatives were adopted, including a switch to cleaner fuels and incineration treatment of drains with a high environmental load, aiming to maintain the load levels from emitted gases and drains at the levels of fiscal 2009 even as the plant operation ratio began rising as the economy recovered. The particulate matter in emitted gases, NO_x and SO_x emissions, and chemical oxygen demand (COD) of drains were consequently kept at levels close to those of fiscal 2009. The figures are also considerably lower when compared to those in fiscal 1970.

Regarding the management structure, working level personnel from all plants met at least twice during the year to convey and discuss societal trends regarding the environment, as well as companywide improvement targets and plans. The status of progress is reported at audits by management. Meetings to share information with environmental personnel of Group companies are also held regularly, and we have adopted even more practical measures, such as encouraging the acquisition of qualifications as pollution control managers at branch offices and offering repeated training related to environmental conservation to staff engaged in plant operations. Through these measures we pursue environmental management from a perspective geared toward fundamentals of pollution control.

As a consequence, the Mitsubishi Chemical Group has fully complied with the requirements of the Air Pollution Control Act and Water Pollution Control Act in both environmental facilities and management structure. We have also established strict voluntary management standards that factor in prefectural ordinances at our production bases, ensuring comprehensive management.

● Preventing air and water pollution





Purifying and monitoring soil and groundwater

All Mitsubishi Chemical production bases conduct voluntary surveys on soil and groundwater pollution. Production facilities where the surveys have revealed pollution provide notification pursuant to local ordinances or voluntarily, and continue purification and monitoring measures as instructed by the prefectural or city government. To date, seven of our plants have reported the survey results to local governments: in Kashima, Nagoya, Yokkaichi, Mizushima, Naoetsu, Kurosaki and Tsukuba. Each of these plants continues to implement appropriate measures as instructed by the local government. No new soil pollution was confirmed in fiscal 2010.

Plant Report

Yokkaichi Plant: Progress in recurrence-prevention measures for inappropriate processing of environmental data

At the [Mitsubishi Chemical Yokkaichi Plant \(Japanese only\)](#), a special investigation team made suggestions on recurrence-prevention measures concerning the inappropriate processing of environmental data revealed in fiscal 2009, involving the inappropriate handling of drainage data and omissions in emitted gas measurements. In June 2010, the plant submitted a final report to the Mie Prefecture and Yokkaichi City governments. Below is the status of progress in recurrence-prevention measures stated in the final report:

1. Strengthening management structure for environmental conservation

Specific duties assigned to pollution control officers, supervisors and managers were made clearer, and pollution control managers were appointed from among members of the Responsible Care Department (currently Environment and safety Department). Environmental managers were appointed for Manufacturing Divisions, facilitating information exchange with worksite personnel and ensuring effective functioning of pollution control organizations.

2. More intensive environmental management processes

(1) More involvement by pollution control managers and establishing places for discussion

To prevent omission of measurements for emission gas analysis and other items, pollution control managers will approve measurement plans and set up meetings for confirmation among relevant personnel following the approval.

Measurement data obtained are cross-checked and confirmed by several people, which prevents tampering. The RC Committee also meets at each location every month to identify all issues and prevent trouble. We continue to build on these regular occasions for opinion exchanges.

(2) Involvement by third-party analysis organizations

To prevent data substitution and other inappropriate actions, third-party analysis organizations are involved when cross-checking measurement data.

3. Employee education

(1) Thorough employee education

During fiscal 2010, Plant Managers made a total of 38 advisory talks related to environmental matters, pursuant to the Basic Policy of Environmental Management for Preventing Recurrence and Recovering Trust, to 1,918 people, including employees of Group companies. Worksite patrol for confirmation and advisory talks continues to take place.

(2) Compliance education

To make the importance of compliance known, education was provided and showed violation examples. A total of 477 staff took lessons in seminars for different tiers of employees, 546 in seminars by the Internal Control Department of the head office and 1,886 via self-initiated seminars (e-learning). We will continue with thorough compliance education by giving advisory talks on environmental compliance at various seminars.

(3) Environmental legislation education

Seminars on legislation were held a total of 11 times for related personnel, on environmental laws, regulations, prefectural ordinances and pollution control conventions concluded with city governments.

4. Unifying drainage outlets

Drainage outlets in 40 locations will be unified in four steps to 16 locations by 2012, for intensifying management at outlets. At the same time, management of pollutant sources at manufacturing facilities will be intensified. The management intensification in the two aspects will significantly reduce the risks of polluted water leakage into public water. The second step was completed during fiscal 2010, reducing the number of outlets to 25.

▶ [To the Yokkaichi Plant website \(Japanese only\)](#) 

Responsible Care Activities

Preventing Global Warming

Promoting energy conservation activities at different locations

In its *APTSIS 10* medium-term management plan up to fiscal 2010, Mitsubishi Chemical focused energy conservation activities with a target of, by fiscal 2010, reducing unit energy consumption by 20% or more compared to fiscal 1990.

Fiscal 2010 was the third year of the petrochemical plant energy conservation project that began at Mizushima Plant in fiscal 2008 for achieving the target, and the project is now underway at the Kashima, Kurosaki, and Yokkaichi Plants as well. In fiscal 2010, the heat recovery tactic devised at the Kashima Plant was also applied at the Kurosaki Plant, resulting in a reduction of steam consumption as a heat source. While it was about 12,000 tons of CO₂ reduction as a result of energy saving activities in fiscal 2010, in-house power generation facilities were also optimized based on forecast future energy demand at the plant. Large-scale facility improvement that would bring cost savings and a reduction in CO₂ emissions of about 45,000 tons is underway, with a December 2011 target for completion.

▶ [To Kurosaki Plant website \(Japanese only\)](#) 

VOICE

Utility (UTT) facilities¹ optimized at Kurosaki Plant

Hiroshige Sato

Technical Group, Production Coordination Section, Petrochemical Production Department 1, Kurosaki Plant

Mitsubishi Chemical Corporation



At the Kurosaki Plant, the conventional large boilers are being replaced with small package boilers in efforts to streamline the utility supply systems. Even though these are small boilers, their scale is unprecedented for a chemical plant. Many issues needed to be solved, including dealing with the changing quality of steam being supplied. When the boilers are introduced, these issues are solved one by one in close contact with production sites, engineering divisions, and technical divisions. As a result, the boilers entered full-scale operation in May 2011, configuring an efficient utility supply system. Operation and administration at the plants are never lenient. In charge of utility supplies, we are always mindful of the need to reduce costs through energy savings and environmental load while ensuring stable supply, and we continually consider the optimal operations suited to the situations.

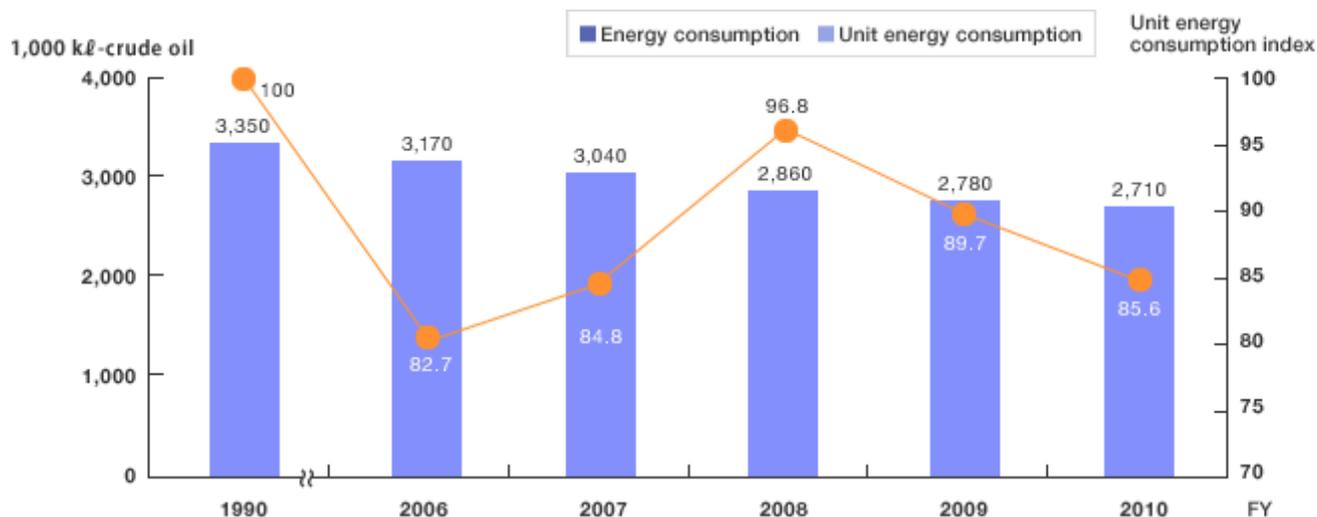
¹ Utility (UTT) facilities: Auxiliary facilities generally used at plants for functions such as electricity (power reception, transformation and generation), steam, compressed air, nitrogen, air conditioning (chilled water), water supply and drainage treatment

Reduction in energy consumption and greenhouse gas emissions in fiscal 2010

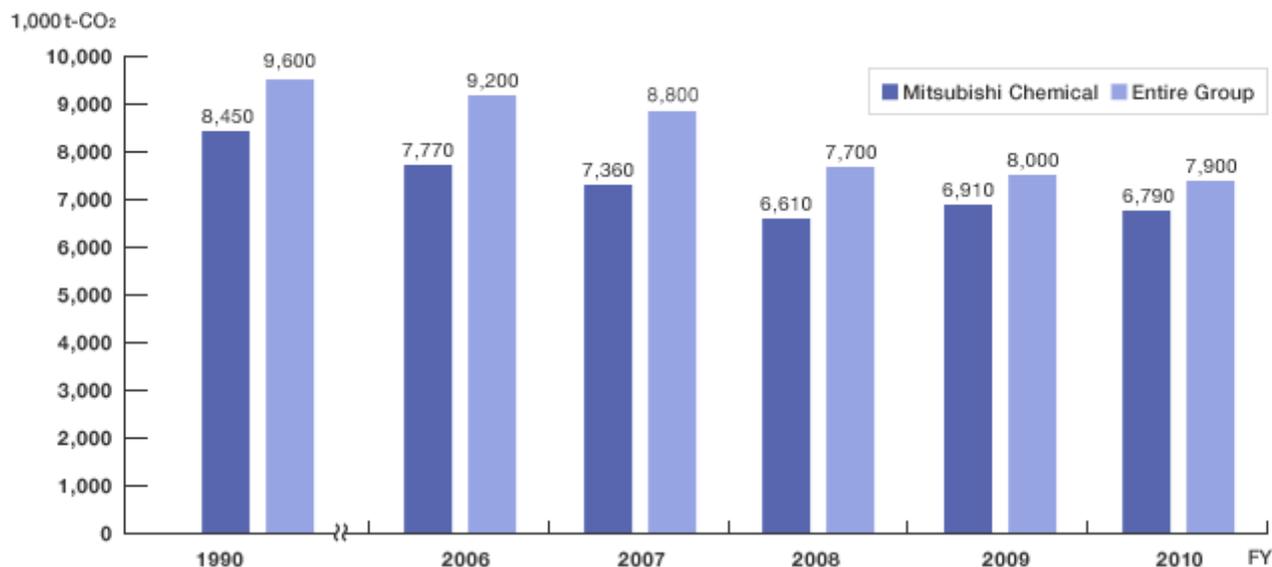
Compared to fiscal 2008, when production volumes declined significantly due to the global recession, production volumes recovered in fiscal 2009 and 2010, with unit energy consumption in 2010 up 4% from the previous year. The energy consumption amount was reduced from the previous year by 70,000 kiloliters–crude oil/year when converted to crude oil, due to continued energy conservation activities and reconsideration concerning fuel. Consequently, greenhouse gas emissions by Mitsubishi Chemical were 24% lower than in fiscal 1990. The entire Group’s emissions also declined; down 1.3% from the previous year.

The Mitsubishi Chemical Group will continue striving to reduce greenhouse gas emissions by the entire Group and develop and manufacture products that help conserve energy, thereby contributing to society’s overall reduction of total greenhouse gas emissions.

● Energy consumption (Mitsubishi Chemical)



● Greenhouse gas emissions



Continuing with improvement measures for unit energy consumption in transport

Mitsubishi Chemical submits actual energy consumption amounts, energy consumption reduction plans and other reports to the Ministry of Economy, Trade and Industry each year, as a specified consigner² stipulated by the amended Act on the Rational Use of Energy that went into force in April 2006. For achieving the Act's target of reducing unit energy consumption by an average of 1% or more annually, seen from a medium- to long-term perspective, Mitsubishi Chemical has sought effective energy usage together with transport contractor Mitsubishi Chemical Logistics Corporation. Attempts are also being made to reduce CO₂ emissions.

Mitsubishi Chemical has boosted the efficiency of coastal shipping vessels engaged in domestic sea transport and vehicles used for land transport by increasing lots (shipping lot volumes). Also, "friend" fins³ are attached to coastal shipping vessels, and about 300 transport vehicles are equipped with on-vehicle terminals that support eco-friendly driving, in addition to eco-friendly tires.

Along with these measures, in fiscal 2010, coating for improving fuel efficiency was applied to coastal shipping vessels. However, highly fuel efficient coastal shipping and railway transport declined due to the effects of restructuring and the Great East Japan Earthquake that struck on March 11, 2011. The weighting of transport modes also changed. As a result, unit energy consumption increased by 0.6% from the previous year, and fell below the targeted 1% reduction in unit energy consumption. However, CO₂ emissions were reduced by 13% from the previous year.

Improving unit energy consumption seems difficult in fiscal 2011 as well, given the effects of the Great East Japan Earthquake. However, Mitsubishi Chemical will continue action to reduce fuel consumption and CO₂ emissions by keeping up with the measures implemented so far.

² Specified consigner: Business entity that transports 30 million tons-km of cargo in its possession each year

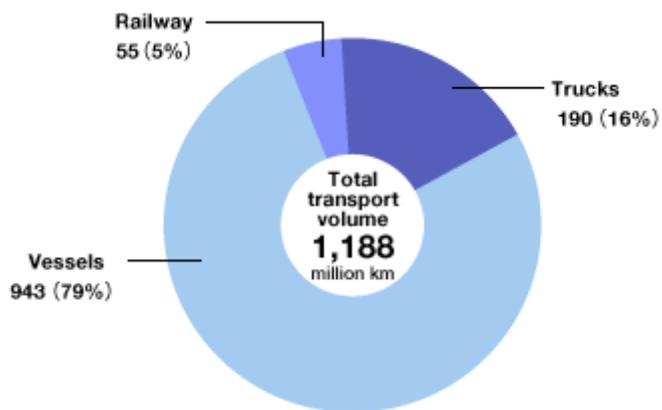
³ "Friend" fin: A tactic for obtaining large thrust force by attaching several fins to the stern in front of the propellers, thereby regulating the water flow to the propeller. The propeller's torque is suppressed by the water flow-regulating function, enabling navigation with fewer rotations per minute. This method helps conserve energy and reduce CO₂ emissions

● Actual reduction in unit energy consumption (Mitsubishi Chemical)

FY		2006	2007	2008	2009	2010
Energy consumption	GJ	1,175,069	1,130,753	908,307	953,157	830,671
Fuel consumption (converted to crude oil)	Kℓ	30,317	29,173	23,434	24,591	21,431
Transport weight	Million tons	4.6	4.6	3.9	3.9	3.7
Transport volume	Million tons-km	1,504	1,486	1,196	1,239	1,188
CO ₂ emissions	t-CO ₂	80,700	77,800	62,500	65,800	57,500
Unit energy consumption	Kℓ/million tons-km	20.16	19.63	19.59	19.85 (17.92)	18.04

Unit consumption excluding return voyages by empty vessels is shown in parentheses. The fiscal 2010 figure indicates unit consumption excluding return voyages.

● Breakdown of transport volumes by transport mode in fiscal 2010 (Mitsubishi Chemical)



Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

Responsible Care Activities

Reducing Overall Chemical Substance Discharge

Reducing overall PRTR¹ discharge

Mitsubishi Chemical annually publishes the emissions of substances regulated by the Specific Chemical Substances Act², as well as the 480 types of substances specified by the Japan Chemical Industry Association (Nikkakyo) (including VOC³) and the transferred amounts of each.

During fiscal 2010, the second phase of construction work for the benzene emission reduction measures⁴ (installation of an emission gas incineration kiln) was completed. We have continued to conduct this work as a measure against VOC. Because of the effects of this and other measures, overall discharge was 990 tons, down 90 tons, or 8%, from fiscal 2009. Overall discharge has declined steadily since fiscal 2005.

Looking only at substances regulated by the Specified Chemical Substances Act, the discharge in fiscal 2010 was 330 tons, up 22% from fiscal 2009. This is due to significant expansion in the scope of substances regulated by the Specific Chemical Substances Act that resulted from amendments to the Act in fiscal 2010, and the fact that the regulated substances contained in the discharge were measured by microanalysis. We will continue to make efforts to reduce the discharge of substances regulated by the Specific Chemical Substances Act, mainly VOC discharge.

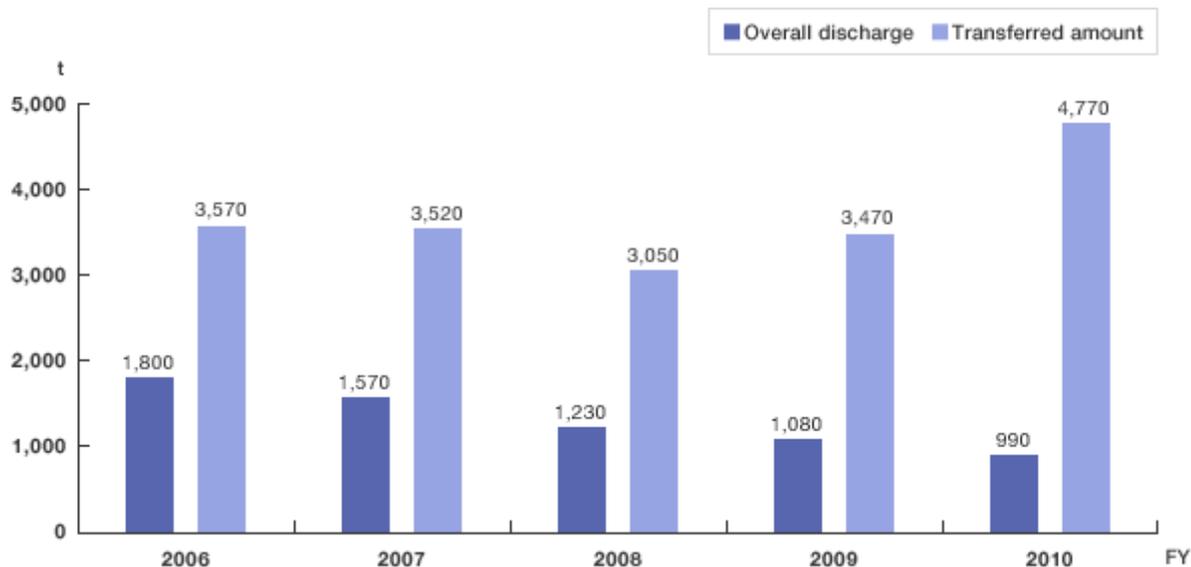
¹ Pollution Release and Transfer Register (PRTR): A notification system for the released and transferred amount of chemical substances. This is a system for clarifying, aggregating, and publicizing the data on the quantity of hazardous chemical substances released into the environment from each source, or the quantity taken outside facilities as a part of waste.

² Specific Chemical Substances Act: The official title is the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof. The Act was introduced in 1999, with the aim of improving voluntary management of chemical substances by businesses by clarifying the discharged amount of specific chemical substances into the environment and having the businesses provide information, thereby preventing obstacles to environmental conservation.

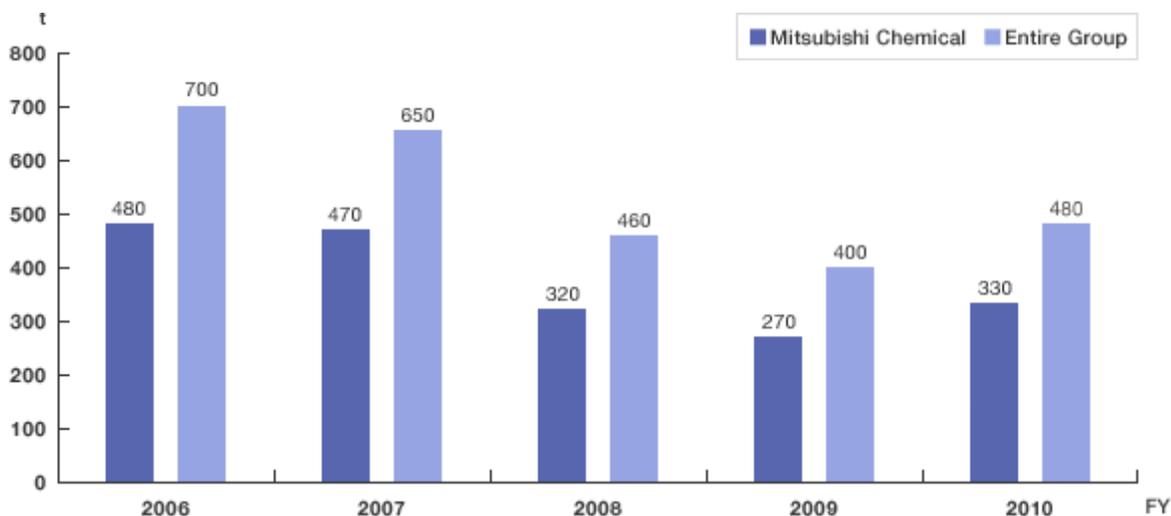
³ Volatile organic compound (VOC): Typical substances include toluene and xylene. These compounds became subject to regulation by the amended Air Pollution Control Act of 2006, as source substances of photochemical oxidants (photochemical smog).

⁴ Measures to reduce benzene discharge: Cleaning using simple removal facilities was conducted in fiscal 2008, and absorption facilities were installed in fiscal 2009 as a part of the first-phase work.

● Total discharge and transferred amount of Nikkakyo specified substances (Mitsubishi Chemical)



● Discharge of PRTR-regulated substances



Failure of the entire Group to achieve the targeted VOC discharge reduction

The Mitsubishi Chemical Group was targeting a 50% reduction of VOC discharge by fiscal 2010, compared with fiscal 2000 levels. Proactive measures for VOC reduction have been taken to achieve this target, such as installing flare incinerators⁵ and replacing tank covers with inner floating roofs. The VOC discharge reduction ratio for fiscal 2009 resultantly was 53% that of fiscal 2000, achieving the target a year ahead of schedule. Thus, the management target was set as maintaining the discharge in fiscal 2010 at the fiscal 2009 level.

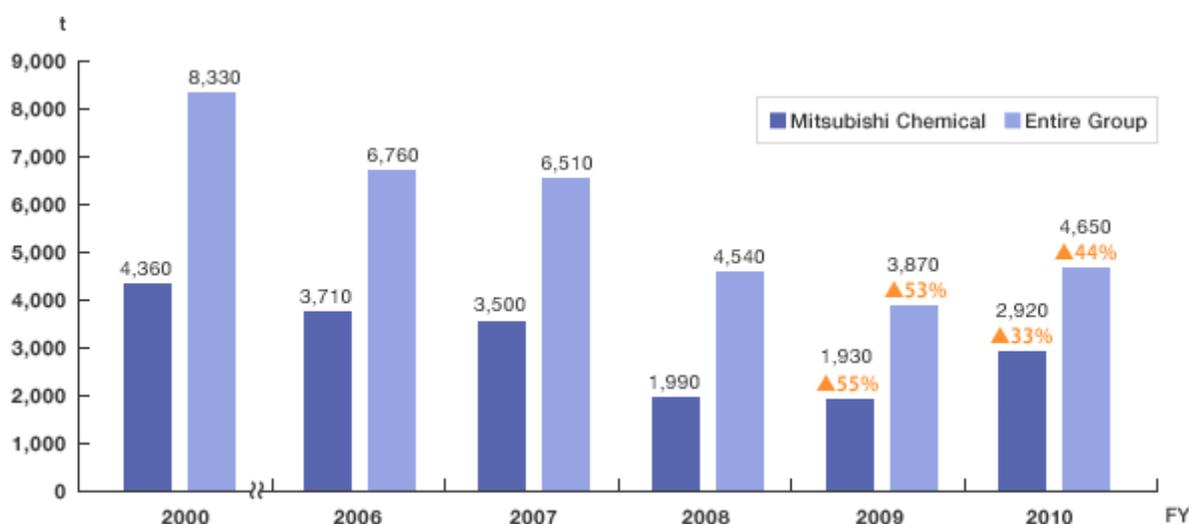
Notably, reduction measures through cleaning and absorption have been undertaken in a planned manner for the three years since fiscal 2008 for benzene (a hazardous air pollutant), a VOC. An incinerator was installed at the gas discharging outlets of plants in fiscal 2010, which enabled us to achieve the reduction target for benzene as planned.

However, the total VOC discharge by the entire Mitsubishi Chemical Group in fiscal 2010 came to 4,650 tons, up about 800 tons from fiscal 2009. The reduction ratio was 44% less than fiscal 2000, preventing us from achieving our target. The major factors behind the failure are that the supply of products to users halted in fiscal 2010 due to large-scale regular repair work conducted every four years, and part of the VOC stored in tanks was released into the atmosphere due to the halting of flare incinerators that remove VOC.

Since none of the large-scale regular repair work mentioned above is conducted during fiscal 2011, the targeted reduction of 50% or more compared to fiscal 2000 is expected to be achieved. Studies have already started from both facility and management viewpoints, regarding VOC measures that take the large-scale regular repair work scheduled for 2014 into consideration.

⁵ Flare incinerators: These detoxify discharged gases by incinerating them at the tip of the chimney, a sufficient distance away from production facilities, because environmental pollution could result if discharged gases were released into the atmosphere as is.

● Volatile organic compound (VOC) discharge



* The negative figures for fiscal 2009 and 2010 indicate reduction ratios from fiscal 2000.

Group Report

VOC discharge largely reduced at Shinryo Corporation

At Shinryo Corporation, the VOC discharge in fiscal 2010 was reduced by 1,100 tons, or 75%, compared to fiscal 2005, when businesses that generate VOC were started. The greatest difficulty in activities to promote reduction was in how to reduce isopropyl alcohol (IPA). This substance is released regularly into hot water while mixing, making discharge reduction extremely difficult. At Shinryo's laboratories, studies began in 2007 on alternative solvents and other matters



concerning both facilities and management. As a result, we were able to significantly reduce discharge into the air by semi-closing facilities, revising operation conditions and preventing volatilization of IPA. This enabled us to achieve a VOC discharge reduction far above that targeted by the Mitsubishi Chemical Group, for a 50% reduction by fiscal 2010. Shinryo will continue making efforts to reduce VOC discharge.

Semi-closed facilities

▶ [To the Shinryo Corporation website \(Japanese only\)](#) 

Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

Responsible Care Activities

Waste Reduction and Recycling

Continuing with waste reduction efforts to attain zero emissions

To contribute toward building a recycling-based society, the Mitsubishi Chemical Group has stepped up recycling of assorted industrial waste with a target of zero emissions* by 2010.

The volume of industrial waste generated by Mitsubishi Chemical in fiscal 2010 was 128,000 tons, down 7,000 tons, or 5%, from fiscal 2009. The major factors behind the reduction were the decline in the Volume of sludge generated due to the halting of plants, which reduced the volume of drainage, and the reduction of incinerated ash because of a reduced volume of waste incinerated during the renovation period of incineration facilities.

The recycling ratio of industrial waste improved by 5% compared to fiscal 2009, to 70%. This is a result of stepping up recycling of inorganic sludge and incineration ash into raw materials for cement, recycling wasted carbon and fireproof brick scrap into road subgrade materials, and recycling construction waste through sorted collection.

Through these initiatives, the volume of industrial waste Mitsubishi Chemical generated that was ultimately disposed of as landfill was reduced by 400 tons from 2009, even when including landfilled transient construction waste totalling about 200 tons, to 4,000 tons (landfill ratio of 3.5%).

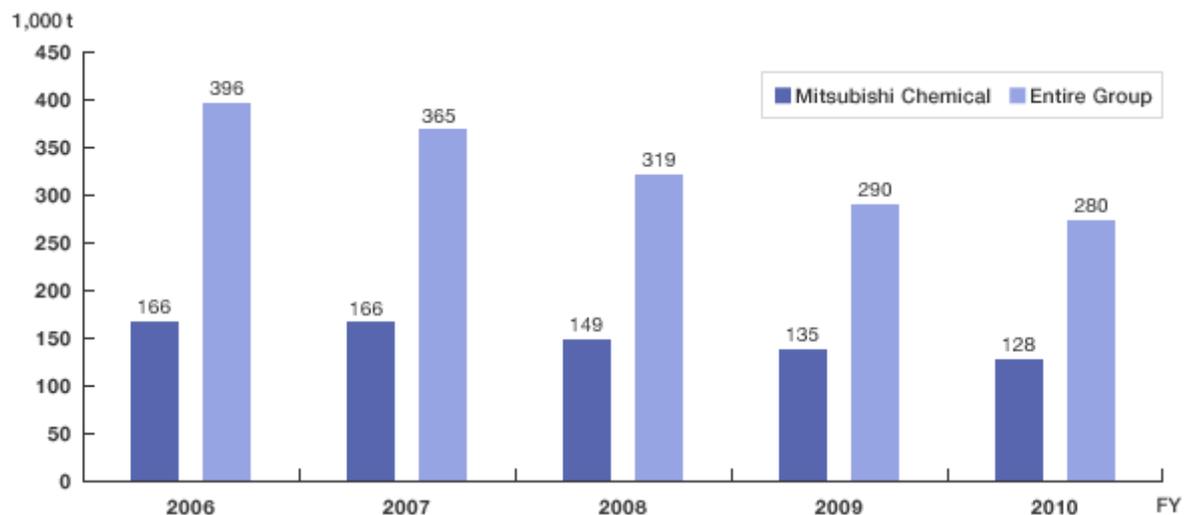
However, we were not able to achieve zero emissions by the 2010 target. The major factors for this include: (1) excess sludge directly and temporarily landfilled at facilities where the volume of industrial waste generated exceeded the capacity of in-house incineration facilities, which resulted from a rise in the plant operation ratio; (2) some of the organic sludge and mixed organic and inorganic sludge was landfilled because it did not meet the acceptance standards of the recycling establishments and (3) recycling was not possible with the incineration ash of products judged as below the standard.

Mitsubishi Chemical will continue striving to promote recycling during fiscal 2011 to achieve zero emissions, through continued research into recycling destinations for sludge and other waste.

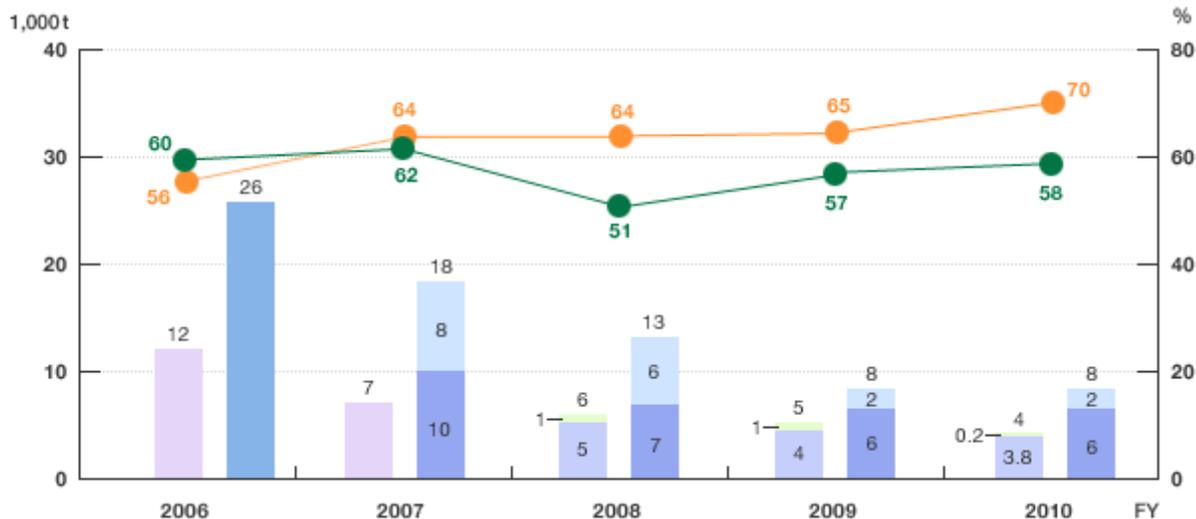
The Volume of industrial waste generated by the entire Mitsubishi Chemical Group was 280,000 tons, down 9,000 tons, or 3%, from fiscal 2009. The volume of industrial waste ultimately disposed of as landfill decreased by 6%, from fiscal 2009, to 8,000 tons (landfill ratio of 2.7%). The entire Mitsubishi Chemical Group also fell short of the zero emission target, so we will continue our efforts to increase recycling.

* Zero emissions: The Mitsubishi Chemical Group defines zero emissions as keeping the volume of industrial waste ultimately disposed of as landfill to a maximum of 1% of the total industrial waste generated (landfill disposal ratio of 1% or less)

● Volume of industrial waste generated



● Volume of industrial waste ultimately disposed of as landfill and recycling ratio



Zero waste achieved at Kashima Plant

Masami Asaoka

Environment Group, Responsible Care Department, Kashima Plant

Mitsubishi Chemical Corporation

At Kashima Plant, zero waste emissions targeted for fiscal 2010 were achieved a year ahead of schedule, in fiscal 2009. In response, we set a target of zero landfill waste for fiscal 2010. With respect to recycling of items that are generated after selecting and crushing by intermediate treatment companies, disposal of which is difficult, final disposal (recycling) establishments have to date been regarded as unacceptable based on past results and other factors. However, we negotiated patiently with these establishments on the grounds that Mitsubishi Chemical is instructing and supervising the intermediate treatment entities and that it guarantees to take responsibility. Recycling was consequently made possible for this waste, enabling us to achieve a zero total for final landfill waste. We will continue striving to maintain zero waste emissions.

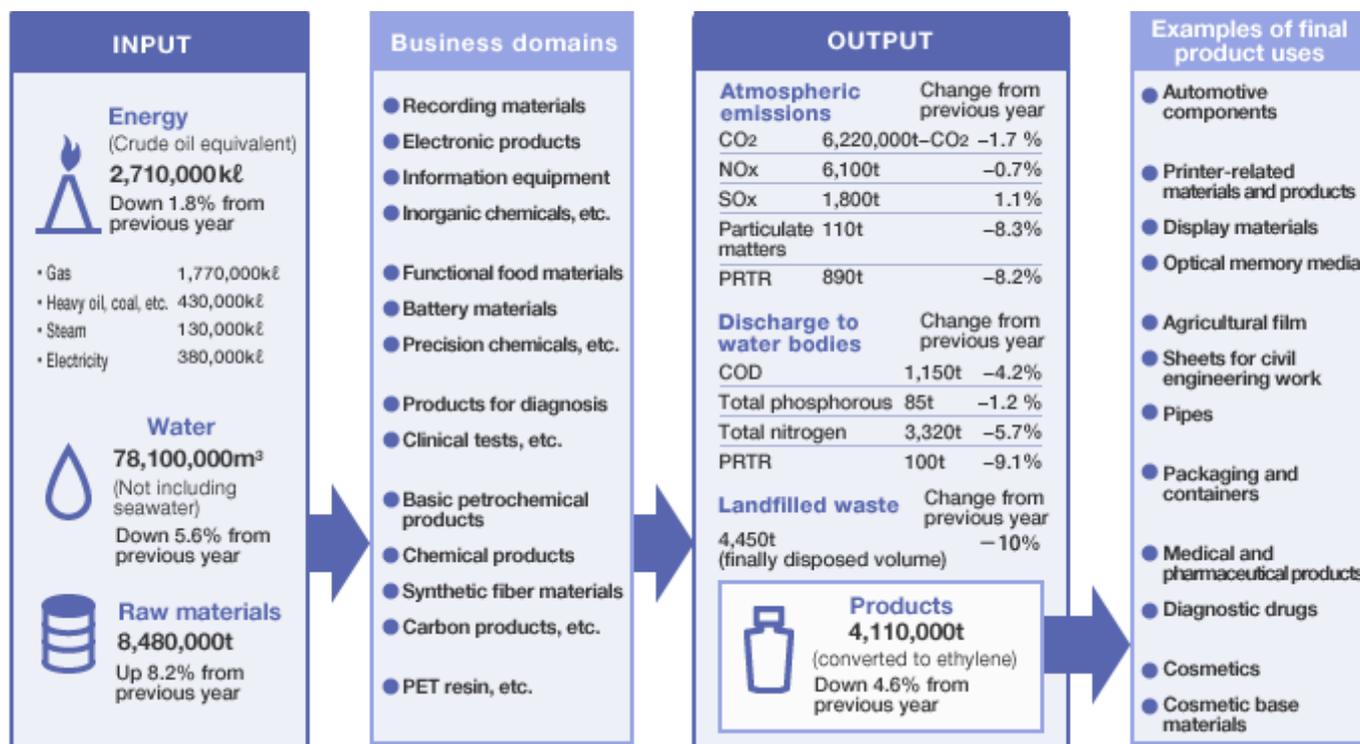


Responsible Care Activities

Material Flow

Continuously identifying and measuring material flows

To effectively reduce the environmental load, the Mitsubishi Chemical Group strives to identify material flows (the quantity of resource input and the environmental load generated from that). Below is a summary of the input (the amount of energy, water and raw materials put in) and output (production amounts of products and the amount of discharged waste), by business domain and final product use.



Responsible Care Activities

Environmental Accounting

Investments in fiscal 2010 for environmental conservation amounted to about 4.6 billion yen, with expenses at about 26.4 billion yen

During fiscal 2010, a total of about 4.6 billion yen was invested for discharge and other water pollution countermeasures, reducing emission of volatile organic compounds (VOCs) and other atmospheric pollutants, as well as reducing waste, resource and energy conservation and other measures to conserve the global environment and promote greening at plants.

Major investments for conserving the environment included: 700 million yen for countermeasures against water contamination, such as improvement and unification of discharge ports, strengthening of water resource management and installing monitoring devices; 400 million yen for reducing emission of atmospheric pollutants, such as adding benzene absorption facilities, installing floating roofs on storage tanks and adding and improving dust collecting devices; 300 million yen for renewing incinerators as a measure to deal with waste; 2.8 billion yen for conservation of the global environment such as in optimization of UTT facilities¹ and recovery of waste heat; and 300 million yen for promoting greening at plants.

Expenses include 4 billion yen for research and development on production efficiency enhancement, as well as total spending of 26 billion yen for repair of drainage treatment facilities and incinerators, while optimizing maintenance and management costs. The figure was 1.6 billion yen lower than in fiscal 2009. Outsourcing costs related to waste disposal, which are necessary for achieving zero-emission², increased by 200 million yen from fiscal 2009 to 1.9 billion yen.

We plan to continue making investments during fiscal 2011 for reducing discharge risk affecting public water areas, reducing smoke, VOCs and other emissions to the atmosphere, and intensifying monitoring and management.

Major investments concerning accident prevention and safety include 100 million yen for safety enhancement measures for light oil recovery facilities from which leakage occurred in the past, and improvement of security measures at business establishments. Though the total expenses were reduced by 2.6 billion yen compared to the previous fiscal year, 9.3 billion yen was spent for purchasing nitrogen for accident prevention, statutory inspection for accident prevention, fire extinguishing facilities, etc.

¹ Utility (UTT) facilities: Accessory facilities for electricity (power reception, transformation and generation), steam, compressed air, nitrogen, air conditioning (chilled water), water, discharge treatment, etc. typically used at plants

² Zero-emission: The Mitsubishi Chemical Group defines zero-emission as maintaining the final disposal volume of industrial waste at 1% or less (final waste disposal ratio of 1% or less) of the total industrial waste volume generated

● Investments and expenses for the environment, accident prevention and safety (Mitsubishi Chemical)

(million yen)

Environmental conservation costs		2010		2009	
Category		Investment amount	Expenses	Investment amount	Expenses
Environmental conservation costs for suppressing environmental load generated in business areas due to production and service activities (business area costs)		4,294	20,507	1,721	22,583
Breakdown	1. Pollution prevention costs	1,192	14,186	1,353	15,472
	1. Global environmental conservation costs	272	911	266	1,345
	1. Resource recycling costs	2,831	5,410	102	5,765
Environmental conservation costs in management activities (environmental management activities costs)		0	1,144	0	1,092
Environmental conservation costs in R&D activities (R&D costs)		0	3,712	0	3,304
Environmental conservation costs in social contribution activities (social contribution activities costs)		267	428	28	462
Costs for dealing with environmental damage (environmental damage costs)		9	31	1	55
Other environmental conservation costs (other costs)		0	534	0	543
Subtotal		4,571	26,356	1,750	28,038

Accident prevention and safety costs		2010		2009	
Category		Investment amount	Expenses	Investment amount	Expenses
Legal measure costs for accident prevention and safety (legal accident prevention measure costs)		2	3,331	270	3,564
Voluntary risk management costs for accident prevention and safety (voluntary accident prevention measure costs)		113	5,190	39	7,455
Accident prevention and safety costs in management activities (accident prevention management activities costs)		0	768	0	885
Subtotal		115	9,289	309	11,904

Total		4,686	35,645	2,059	39,942
--------------	--	--------------	---------------	--------------	---------------

Responsible Care Activities

Biodiversity Preservation

Began assessing impacts on ecosystems as a group

In recent years, recognition of the importance of biodiversity preservation at different levels, from ecological systems in oceans, forests, and wetlands to species of fauna and flora, as well as microbes, in addition to genetic diversity, has become widespread, motivated by the need to protect and nurture the diverse gifts that life forms provide.

Against this backdrop, the Mitsubishi Chemical Group has conducted surveys on ecosystems within and around its facilities, and sought to protect them. Since fiscal 2009, the Group has also upheld the Nippon Keidanren Declaration on Biodiversity¹ as a member of the Mitsubishi Chemical Holdings Group. In a consistent, self-initiated manner, our activities began with the objective of reducing impacts from our business activities on biodiversity.

Specific activities were decided on with reference to the Corporate Ecosystem Services Review (ESR)⁴, tools developed jointly by the World Business Council for Sustainable Development (WBCSD)² and the World Research Institute (WRI)³, and the Guidelines for Private Sector Engagement in Biodiversity prepared by Japan's Ministry of the Environment. In fiscal 2010, studies commenced at the Yokkaichi Plant as a model for evaluating management and reduction activities for chemicals within the plant, from the viewpoint of the impact on biodiversity. We plan to conduct companywide activities for assessing impact on biodiversity after establishing the assessment method with reference to the study results.

We will continue concentrating efforts on business activities that are mindful of biodiversity preservation, mainly through environmental protection activities. At the same time, we will also assess impacts of our products and services on ecosystems throughout their life cycle. We maintain a policy of developing such activities to be effective for protecting ecosystems.

¹ Nippon Keidanren Declaration on Biodiversity: Announced by Nippon Keidanren in March 2009, the Declaration comprises seven main policies including harmony between the natural circulation and business activities and promotion of a resource-recycling style of business administration.

² World Business Council for Sustainable Development (WBCSD): Established at the time of the United Nations Conference on Environment and Development held in 1992, this is a council of private enterprises organized in its current form in 1995. With the participation of about 200 enterprises from over 30 countries, the Council has been active in 20 areas of industry, aiming at environmental preservation, economic development and sustainable development of fair societies.

³ World Research Institute (WRI): An environmental think tank established in 1982 and headquartered in Washington, D.C.

⁴ Corporate Ecosystem Services Review (ESR): Guidelines for supporting strategy formulation in management of business risks and opportunities arising from companies' dependency and impact on ecosystems. Benefits from nature are defined as ecosystem services, and trends in global ecosystem services in the past 50 years have been categorized into supply (food, fresh water, etc.), adjustment (air quality, climate, etc.), cultural (recreation and eco-tourism), and platform (water cycle, etc.) services. Strategy formulation is made possible by checking each item pursuant to the guidelines.

The Tsukuba Plant's rich environment

The plants and animals shown here have been identified around the Tsukuba Plant.

Wild birds

Green pheasant	Brown-eared bulbul	Chinese bamboo partridge
Japanese nightingale	Little egret	Oriental turtle dove
Azure-winged magpie	Japanese white-eye	White wagtail
Japanese tit	Bull-headed shrike	Sparrow
Skylark	Eurasian siskin	Pygmy woodpecker
Common kingfisher	White-cheeked starling	Meadow bunting

The green pheasant is Japan's national bird.

Mammals

Raccoon	Mole
Weasel	Rabbit



The Tsukuba Plant mascot is a Mudanuki raccoon.

Edible plants

Arabia cordata	Common bracken	Field horsetail
Aralia elata	Chocolate vine	Chestnut
Raspberry	Japanese yam	
Japanese flowering fern	Silverberry	

There are many edible plants.



Insects

Beetle	Dragonfly	Mantis
Stag beetle	Bee	Ladybird
Butterfly	Locust	
Cicada	Grasshopper	

Beetle – You might find them under the parking lot lamps on summer nights.

Reptiles

Viper	Japanese striped snake
Tiger keelback	Japanese rat snake

Vipers – spotted in the bushes around ONY

Fish

Carp	Stone moroko
Catfish	Cobalt rhinogobius
Japanese rice fish	Crayfish
Carassius	Big-ear radix
Weatherfish	

Japanese rice fish can be found in the spring. But we're not telling you where. Many carp are swimming in the drainage tanks, but no fishing is allowed.

Plants

Chinese Spiranthes (type of orchid)	Balloon flower	Chinese milk vetch
Gold-banded lily	Mock strawberry	Kudzu
Thistle	Dandelion	Garden burnet



Mock strawberries – can we eat them?

* Data for plants and animals are summarized in the survey results from 2000 onward.

* The land lot surrounded by the red lines was sold to another company in 2004, but has been conserved as is.

Responsible Care Activities

Quality Assurance

For further stabilization of quality

As a comprehensive chemical manufacturer supplying a wide array of products to customers in a broad range of industries, Mitsubishi Chemical feels it is its duty to strive to prevent quality and product liability (PL) issues, while at the same time increasing customer satisfaction by offering safe and secure products.

To perform this duty, the company has worked to establish in-house organizations for complying with laws and regulations and fulfilling obligations and promises under contracts with customers. In fiscal 2010, the internal verification system (review on in-house regulations and audit) for quality inspection data was improved to strengthen our ability to satisfy customer trust. The measure was implemented as a part of efforts to put increased compliance on track; a top-priority business management issue.

We have also begun reforming the quality inspection data management system for increasing data security. In this way we are working to improve the reliability of quality-related data along with the stabilization of product quality.

Reforming Green Information Management System

As exemplified by Europe's ELV Directive¹, RoHS Directive² and REACH regulation³, demand has risen globally on appropriate management and information disclosure regarding chemical substances contained in products, on a product-by-product basis, throughout their lifecycle.

To respond to these directives and regulations precisely, Mitsubishi Chemical in fiscal 2006 began operation of the Green Information Management System for securely managing and conveying information on chemical substances requiring special management that are contained in products, on a product-by-product basis.

In fiscal 2010, we announced we would obtain and provide information on chemical substances contained in products by using MSDSplus⁵, which is provided by the Joint Article Management Promotion-consortium (JAMP)⁴ and is being disseminated and standardized in Japan. This enables prompt and efficient communication of chemical substance information contained in products in the supply chain (processes from material manufacturers to final product manufacturer).

During fiscal 2011, the initial year of the *APTSIS 15* five-year mid-term business management plan, the Green Information Management System will be reformed so that MSDSplus may be created automatically from in-house survey data and MSDSplus and related information may be obtained and provided via JAMP-GP⁶, a network system of JAMP.

Mitsubishi Chemical intends to contribute, together with raw material manufacturers and customers, to building social systems for managing chemical substances through the supply chain.

¹ End of Life Vehicles (ELV) Directive: A European Union (EU) directive aiming to restrict the use of specified hazardous substances in vehicles, and yield smooth vehicle disposal. The directive prohibits the use of heavy metals (lead, cadmium, mercury, chromium hexavalent) with new vehicles registered on and after July 1, 2003, except in components for which establishment of alternative technologies is difficult.

² Restriction on the use of certain Hazardous Substances in electrical and electronic equipment (RoHS) Directive: Prohibits the use of specified substances in electrical and electronic equipment sold in the EU, requiring manufacturers to fully abolish the use of heavy metals (lead, cadmium, mercury, chromium hexavalent) and specified bromine flame retardants (PBB, PBDE) (Went into force in EU nations in July 2006)

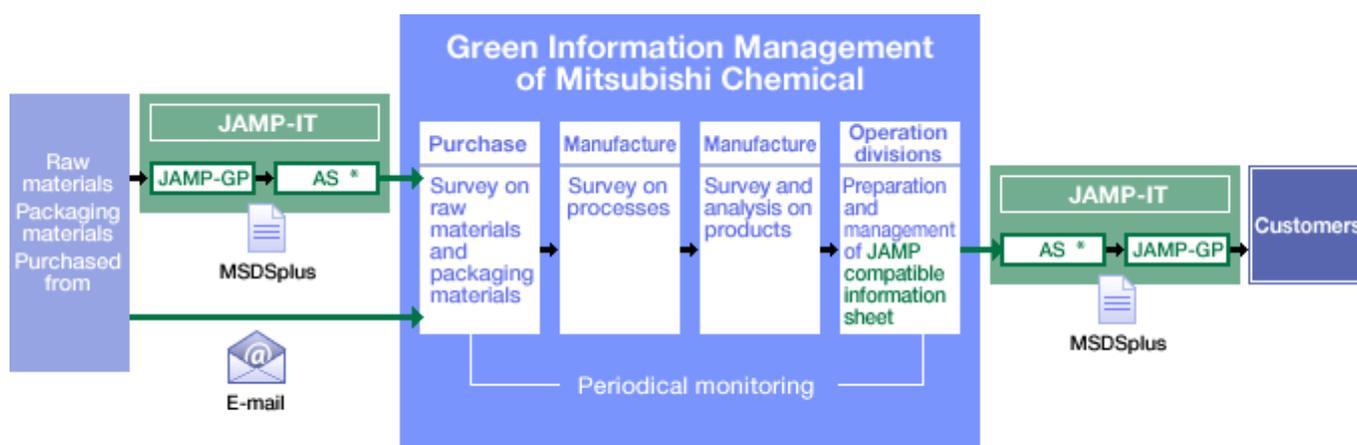
³ Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulation: A system for regulating registration, evaluation and permits on chemical substances distributed inside the EU, along with chemical substances for which risk management is required and methods of their use, in order to protect human health and the environment from hazardous chemical substances

⁴ Joint Article Management Promotion-consortium (JAMP): A cross-industrial organization for promoting appropriate management, disclosure and communication of information on chemical substances contained in components and molded products (articles) in supply chains

⁵ MSDSplus: A common sheet for communicating information on chemical substances contained in products to all parties - from raw material manufacturers to final product manufacturers

⁶ JAMP-Global Portal (JAMP-GP): A platform system for exchanging information on chemical substances

● Green Information Management System



*Application Service (AS): A system for connecting to JAMP-GP

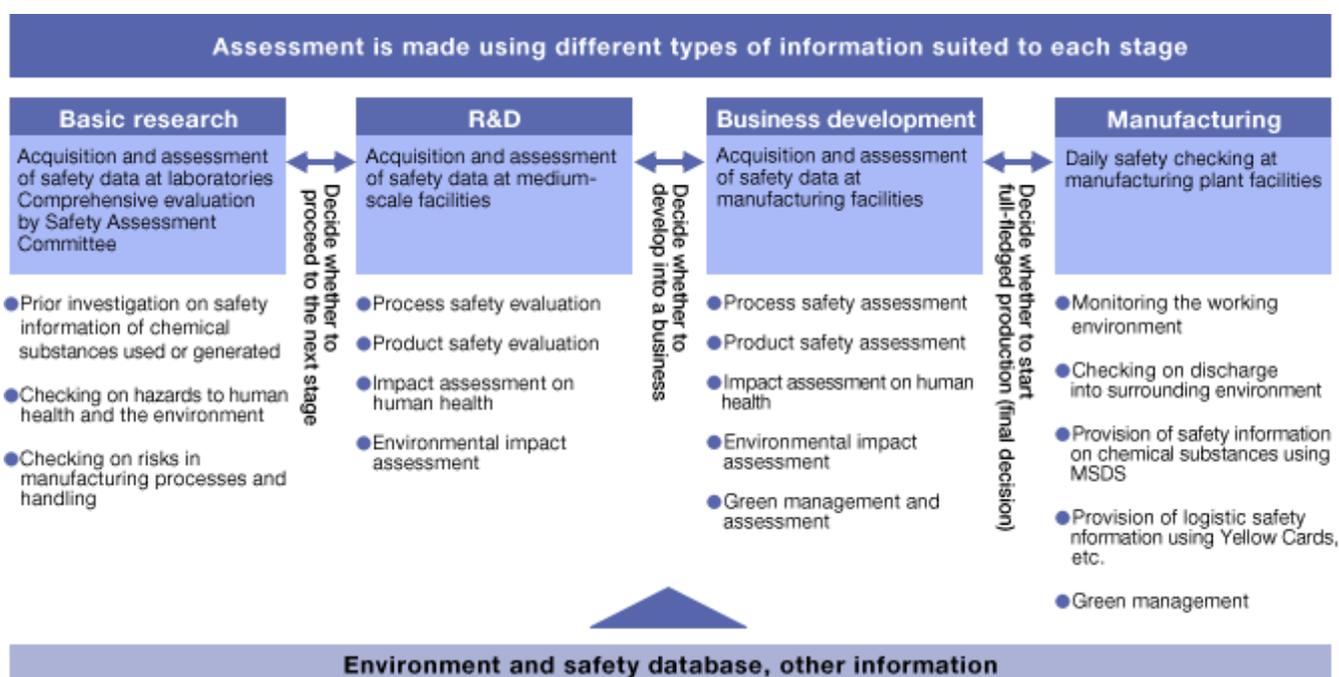
Responsible Care Activities

Management of Chemicals

Our basic stance on safety management of chemicals

The Mitsubishi Chemical Group strives to accurately understand information on all the chemicals it handles; not only for chemical products it manufactures but also their raw materials, by-products and waste generated in the manufacturing processes, as well as their recycled products. Based on the information, the Safety Assessment Committee checks the impacts of chemical substances on people and the environment as well as the safety of manufacturing processes beforehand in executing stringent voluntary management.

● Risk assessment flow on chemical substances in product development

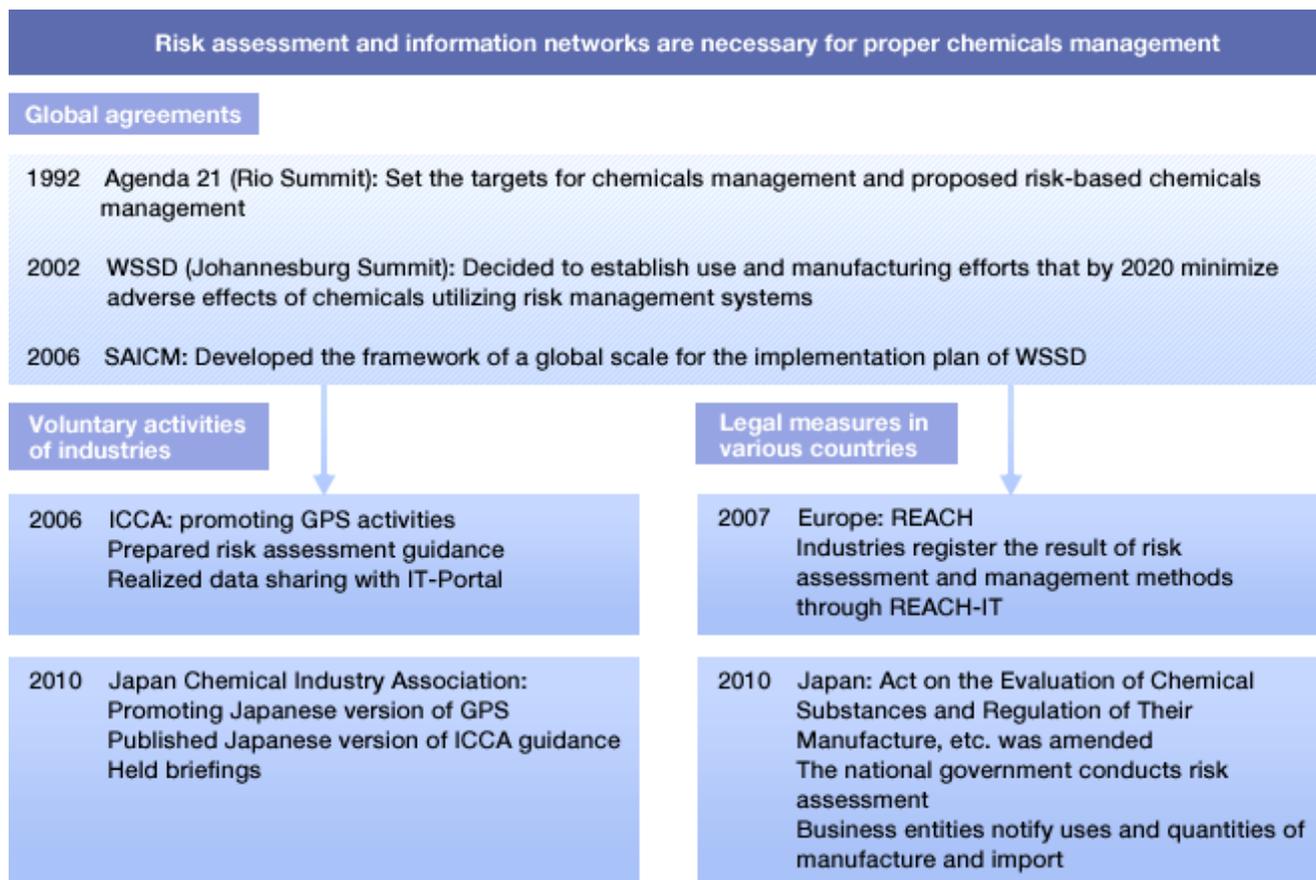


International strategies for chemicals management

In response to the action target of minimizing adverse effects of chemical substances by 2020 agreed to at the World Summit on Sustainable Development (WSSD – commonly known as the Johannesburg Summit) held in 2002, chemicals management efforts have intensified worldwide in accordance with the international strategy Strategic Approach to International Chemicals Management (SAICM) adopted at the First International Conference on Chemicals Management (ICCM-1) held in 2006.

The International Council of Chemical Associations (ICCA) has promoted Global Product Strategy (GPS) activities for attaining the WSSD target, as the voluntary efforts of industries. GPS activities emphasize risk-based chemicals management throughout supply chains, and disclosure of information of risk management on products.

● International trends in chemicals management



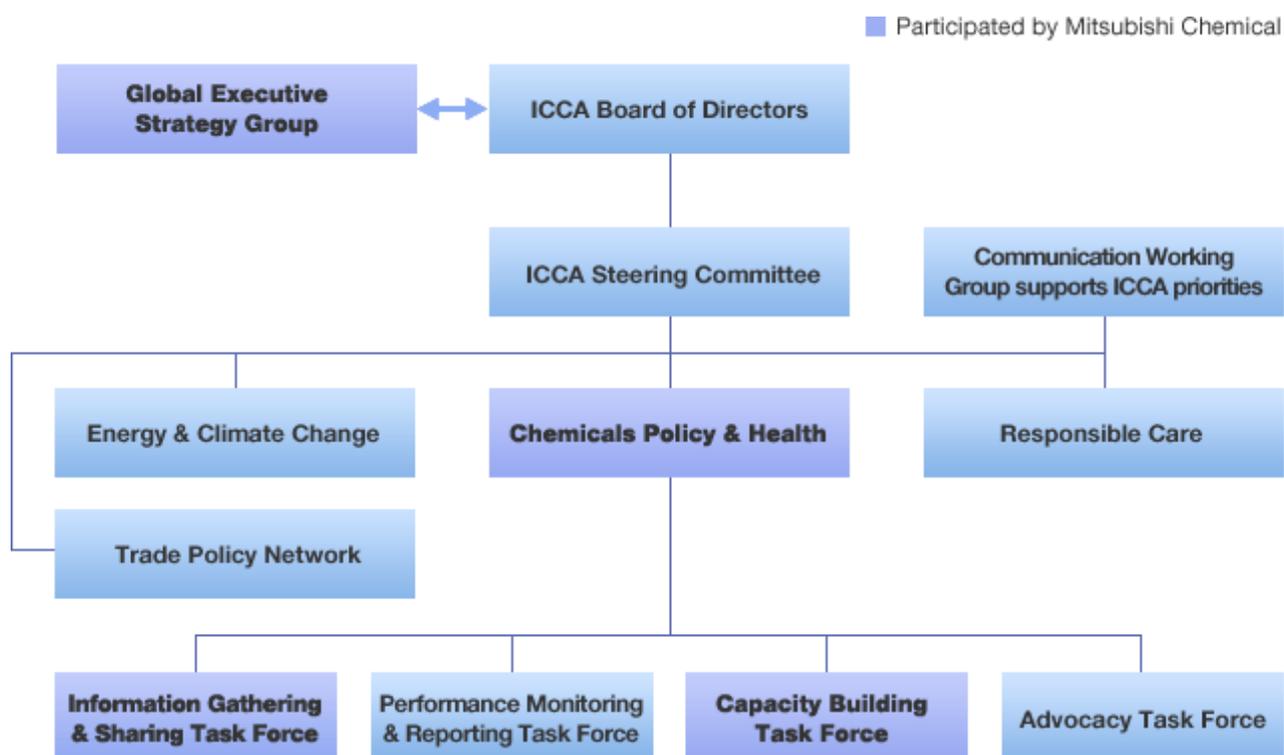
Chemicals management by industries

Contributing to activities of ICCA and Japan Chemical Industry Association, mainly through promotion of GPS activities

The President of Mitsubishi Chemical assumes a role of setting directions for ICCA, as a member of its CEO group. Mitsubishi Chemical is also a member of the leadership group for chemical policy and health that plans and implements skill development programs and lectures in developing countries and for small- and medium-scale enterprises, geared toward attainment of the WSSD targets.

The Japan Chemical Industry Association (commonly known as Nikkakyō), a domestic organization, also engages in voluntary activities for strengthening risk-based chemicals management at businesses (Japan Initiative of Product Stewardship: JIPS), for promoting ICCA's GPS activities. Mitsubishi Chemical is also a member of the committee for promoting and strengthening JIPS. As a part of strengthening of JIPS promotion, the risk assessment guidance was translated and briefings were held on JIPS activities during fiscal 2010.

● Organization Chart of ICCA



In-house GPS activities

Mitsubishi Chemical began GPS activities voluntarily in 2009. These activities involve risk assessment on chemical substances manufactured by the company and management of them in accordance with the results, as well as publication of the results in safety summaries.

During 2009 and 2010, trial GPS risk assessment was conducted for seven substances, for example acetone, while standardizing risk assessment methods. Priority (high, medium, low and out of scope) was set regarding the risk assessment on chemical substances contained in each product. Assessment is to be completed by 2015 for substances ranked as high and medium, and by 2017 for those ranked as low, and safety summaries will be published as necessary. Mitsubishi Chemical group companies also plan to complete GPS assessment for the subject substances concerned by 2018.

VOICE

Promoting GPS activities along with Group companies

Nobuyuki Shimizu
 Environmental Safety and Quality Department
 Mitsubishi Chemical Corporation

Mitsubishi Chemical's GPS activities have developed from conventional RC activities and are not entirely new, though a risk assessment viewpoint has been added. We believe it is important to engage in the activities while letting the plan-do-check-action (PDCA) cycle function properly.

Bimonthly briefings for promoting GPS activities are being held at Group companies as well.

▶ [About GPS activities](#)

Communicating information on chemical substances contained in products

Mitsubishi Chemical compiles information on product constituents, hazards and handling in the form of an Material Safety Data Sheet (MSDS)¹ presented to customers and partially disclosed on its website. In fiscal 2008, we introduced a system that automatically creates MSDSs, following the format of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)², an international system for indicating hazards and toxicity of chemical substances.

We are also a member of the Joint Article Management Promotion-consortium (JAMP)³ and utilize MSDSplus⁴ developed by the Consortium in efforts to provide data on chemical substances contained in products to all members of the supply chain.

¹ Material Safety Data Sheet (MSDS): A safety database of chemical and other substances, and a document for providing information on the properties, hazards and toxicity of chemical substances to other business entities when transferring or shipping chemical substances and products

² Globally Harmonized System of Classification and Labelling of Chemicals (GHS): A system of international classification and labeling related to the hazards of chemicals

³ Joint Article Management Promotion-consortium (JAMP): A cross-industrial organization for appropriate management, disclosure and communication of information on chemical substances contained in components and formed products (articles) to supply chain members

⁴ MSDSplus: A common sheet for communicating information on chemical substances contained in products to all entities; from material manufacturers to those of final products

Dealing with chemicals management regulations

Measures to cope with amended Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (the "Act") was amended largely (the "amended Act") in two steps, in April 2010 and April 2011.

The first-step of the amendment in 2010 also addressed highly degradable chemical substances, adding over 200 such substances to category 2 and 3 monitored chemical substances, of which detailed reports are mandated. In the second-step amendment of 2011, reporting has been mandated on the quantity of all chemical substances that are manufactured, imported and used, and it was decided that the national government will select the priority chemical substances for assessment based on information from business entities. Moreover, risk assessment is conducted on priority chemical substances to select Class 2 specified chemical substances on which restrictions are imposed on the manufacture and imported amount. The amended Act shifted the management method from conventional hazard management to risk assessment in order to attain the target agreed to at the WSSD.

In line with the enactment of the amended Act, Mitsubishi Chemical has prepared for appropriately handling the situation by providing information from governmental organizations and industrial associations such as Japan Chemical Industry Association in-house and to Group companies. We have also participated in a study group for comprehensive management of chemical substances and working group on the amended Act of Japan Chemical Industry Association, and exchanged opinions with the Ministry of Economy, Trade and Industry and National Institute of Technology and Evaluation.

We plan to strengthen in-house chemicals management by organizing information on the quantity and use of chemical substances in our products and utilizing the information in areas such as GPS activities.

Action for REACH regulation

To comply with EU Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) that came into force on June 2007, the Mitsubishi Chemical Group in 2006 established the cross-sectional MCC Group REACH Project. We conduct activities for ensuring compliance with REACH and performance of obligations from the viewpoint of a manufacturer outside the EU that brings products into the EU, while thoroughly analyzing each aspect of complicated legal systems and sharing specific measures to address the situation.

▶ [To outline of REACH and activities to date](#)

In fiscal 2010, our focus was placed on registration of high production volumes or hazardous substances, in addition, management, maintenance and updating of legal information relating to products brought into the EU, and compliance with REACH and other regulations and performance of obligations by affiliated entities in the EU.

Implementation in fiscal 2010

1. Registration of high production volumes or hazardous substances

November 30, 2010, was the 1st registration deadline under REACH of the existing chemical substances that are handled at 1,000 tons or more per year or have high hazard levels. The Mitsubishi Chemical Group carefully examined the matters to be registered through close information exchanges and regular meetings with the only representative appointed by us. Applications for registration of all substances the Group was planning were made by the deadline and accepted by ECHA.

2. Management, maintenance and updating of legal information on products brought into the EU

REACH also mandates management, maintenance and updating of information on the hazards and uses of related substances after completion of registration procedures. To fulfill the obligation, the Mitsubishi Chemical Group strives to obtain the latest information for the registered substances and offer our customers updated information by explaining requirement intentions and descriptions to them. For example, we inform REACH registration numbers to related importers through the supply chain. In response to the revision of REACH Annex II that stipulates the SDS⁵ that came into force on December 1, 2010, we also revised the SDSs for the substances concerned and distributed them to customers.

3. Compliance by affiliated entities in Europe with REACH and CLP regulations and performance of obligations

Mitsubishi Chemical Europe GmbH (MCE), headquartered in Germany, is directly obligated to abide by REACH. MCE collects and provides information on all only representatives, registration numbers, etc. relating to imported products in order to comply with the regulations. The company has also completed notification on the classification and labeling of chemical substances involved with imported products by the deadline for notification under the CLP regulations⁶.

⁵ Safety Data Sheet (SDS): A safety database of chemical and other substances; a document for providing information on the properties and hazards of chemical substances to other business entities when the chemical substances and products are transferred or shipped

⁶ Classification, Labeling and Packaging of substances and mixtures

Future measures

Measures for registration of substances for which registration is due from fiscal 2010

In the EU, with some of the substances of which registration is due from fiscal 2010, currently the activities at Substance Information Exchange Forum (SIEF) are still unclear or no leader is found for joint registration. Assuming that more work would be needed with applicable substances to be registered, the Mitsubishi Chemical Group will continue exchanging information closely with our only representative and proactively conducting technical discussions for registration. At the same time, we aim at completion of registration for all the substances to be registered by sharing the latest information on REACH with those in charge at Group companies, including operational divisions and entities in the EU, and asking for cooperation from related customers.

MCE: Sharing Japanese experts' experience and knowledge with customers in the EU

Marion Ives

Compliance Manager

Mitsubishi Chemical Europe GmbH



Our activities for complying with EU regulations

Mitsubishi Chemical Europe GmbH (Germany) must comply with European Union regulations such as REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) and CLP (Classification, Labelling and Packaging of substances and mixtures). To keep our knowledge up to date in this area, several times a year we participate in workshops by the European Chemicals Agency and national authorities.

EU Member State authorities are responsible for REACH inspections. Enforcement in Germany is delegated to its federated states and regional governments visit companies and check on-site compliance. Successful REACH inspections require that the company has prepared a REACH system for all manufactured or imported chemical products. Mitsubishi Chemical Europe is tasked with showing what party is responsible for which REACH obligations in our supply chain, and Mitsubishi Chemical Group product supply chains outside the EU are often complex and compliance is challenging to prove. To achieve compliance with EU regulations, Mitsubishi Chemical Europe receives strong support from the secretariats of the MCC Group REACH Project Team and MCC departments in Japan.

Communication with our EU customers

REACH and CLP compliance is mandated by law but also expected by our customers for maintaining reliable business relationships. To prevent any additional work for customers, like so-called downstream user reports, we ask or already know in advance how they use the Mitsubishi Chemicals Group product. Mitsubishi Chemical Europe maintains long-term lines of communication with its customers to ensure that products are used properly.

Information service for appropriate risk management measurements

Communication down the supply chain via Safety Data Sheet (SDS) is necessary for informing our European customers about potential hazards and appropriate risk management measurements for the safe use of Mitsubishi Chemical Group products. SDSs are currently changing and becoming more complicated in Europe, and following REACH registration they often contain exposure scenarios to help the assessor develop estimates on exposure, dose and risk.

Preparing adequate exposure scenarios for our products requires expert judgment. We are eager to provide our products safely to our European customers with these scenarios and with the appropriate risk management measures. For this task, we receive a great deal of expert assistance from colleagues in the MCC Group REACH Project Team in Japan.

Responsible Care Activities – Chemicals Management

Outline of REACH Regulation and Our Activities to Date

Outline of REACH regulation

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) refers to European regulations that came into force in June 2007 and have been applied since June 2008, ensuring a high level of protection of human health and the environment, while maintaining and strengthening competence in the chemicals industry in the European Union (EU).

REACH mandates that companies which manufacture or import one ton or more of chemical substances that are placed on the market in the EU register them in a succession of steps. The authorities evaluate the submitted data after the registration and methods of safety management concerning the substances for which the business applied for registration, and grant approval on the use of specified hazardous substances indicated on the application. These regulations clearly demand that businesses conduct extremely complicated and extensive chemicals management.

REACH obligates all companies in the EU that handle chemical substances (manufacturers, importers, and users) to properly manage them based on risk assessment, maintain the management processes, and exchange information among all members of supply chains (from manufacturers of raw materials to those of final products).

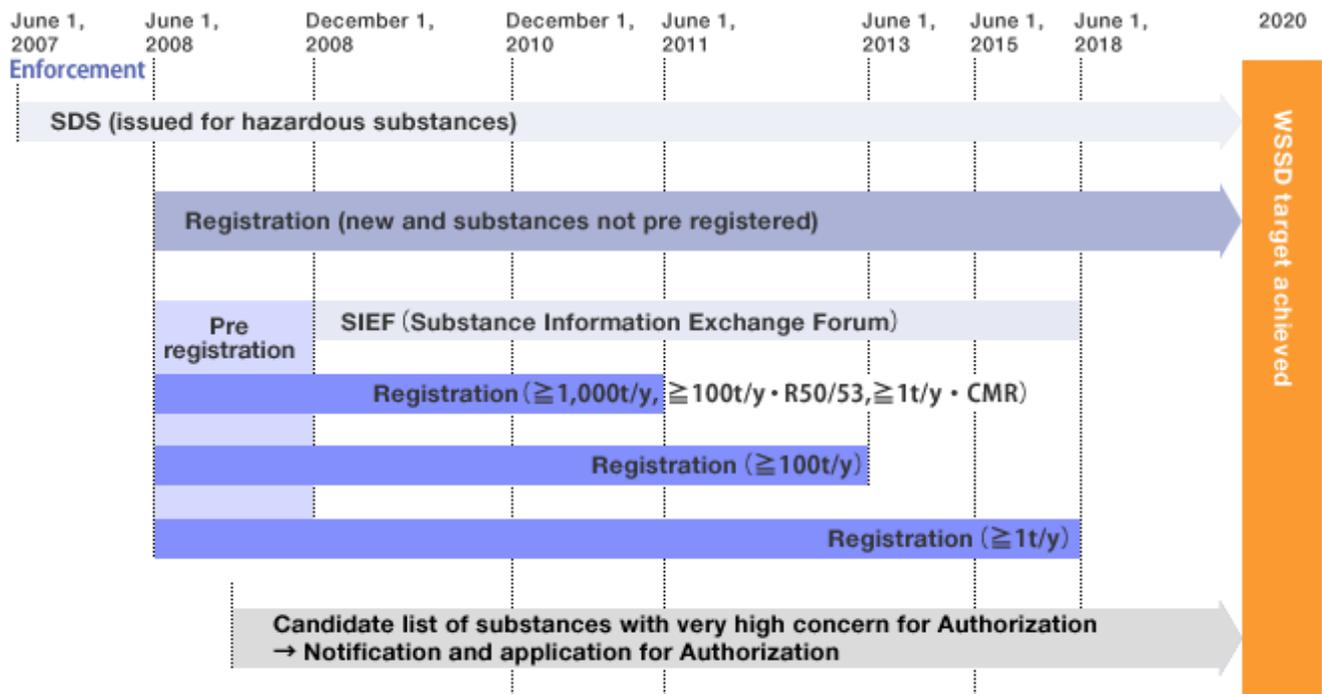
The first step in the procedure is registration. Companies intending to register the same chemical substances jointly conduct a risk assessment for registration application, comprising technical documentation that mainly summarizes information on hazards of the substances and management methods based on risk assessment, and considers uses and applications of the substances.

The Mitsubishi Chemical Group recognize the three priority issues in its efforts to comply with REACH, such as (1) formation of the Substance Information Exchange Forum (SIEF), (2) promotion of communications, and information exchange among supply chain members.

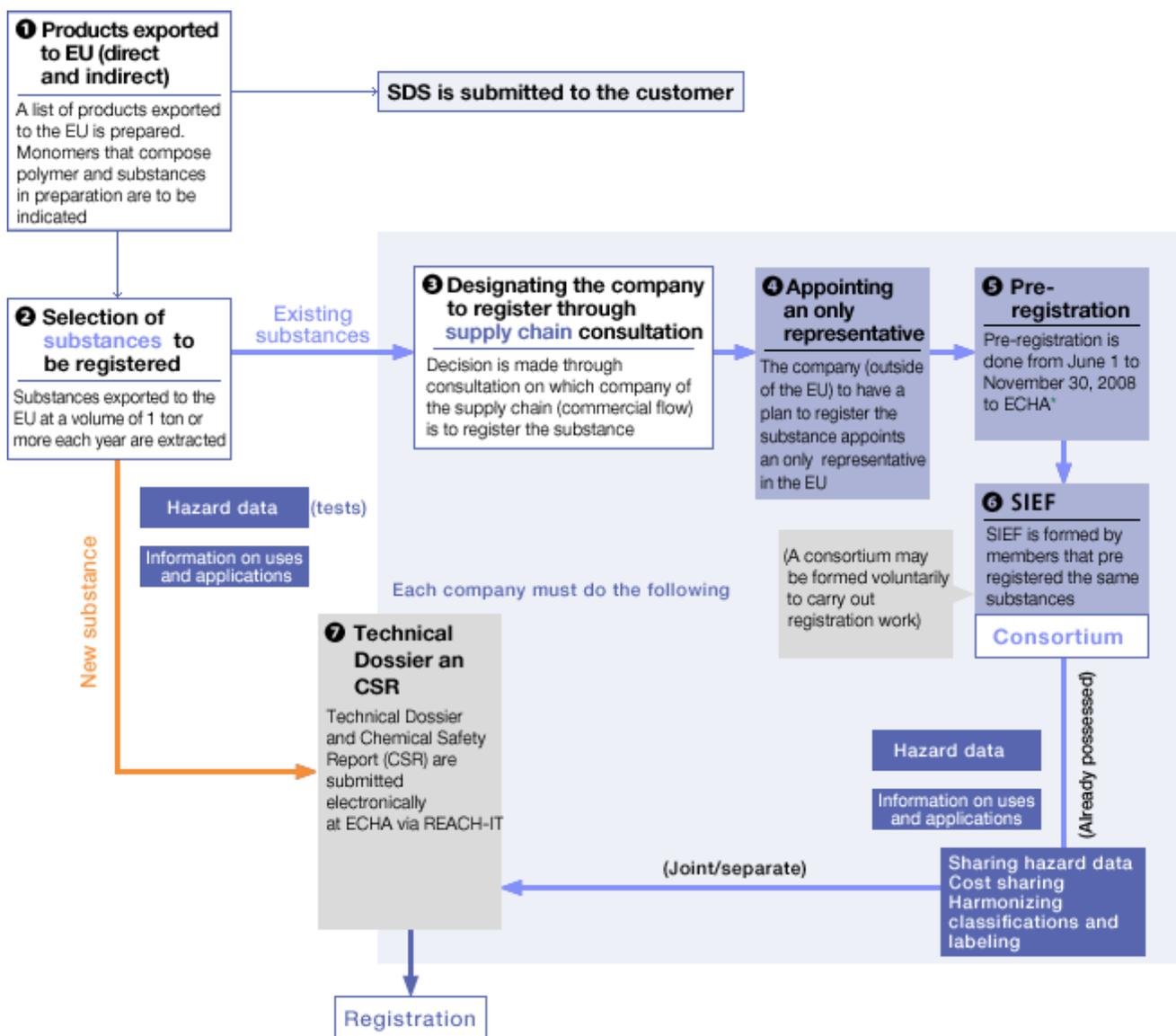
Features of REACH regulation

- Demands new and existing chemical substances be handled in almost the same way
- Substances contained in articles also create an obligation in some case, if applicable
- Mandates that industries conduct risk assessment on chemical substances
- Requests information on safety and handling of substances to be communicated to all members of the supply chain
- Requests entities handling the same chemical substance to share the safety data

● Schedule for REACH



● Process flow to REACH registration



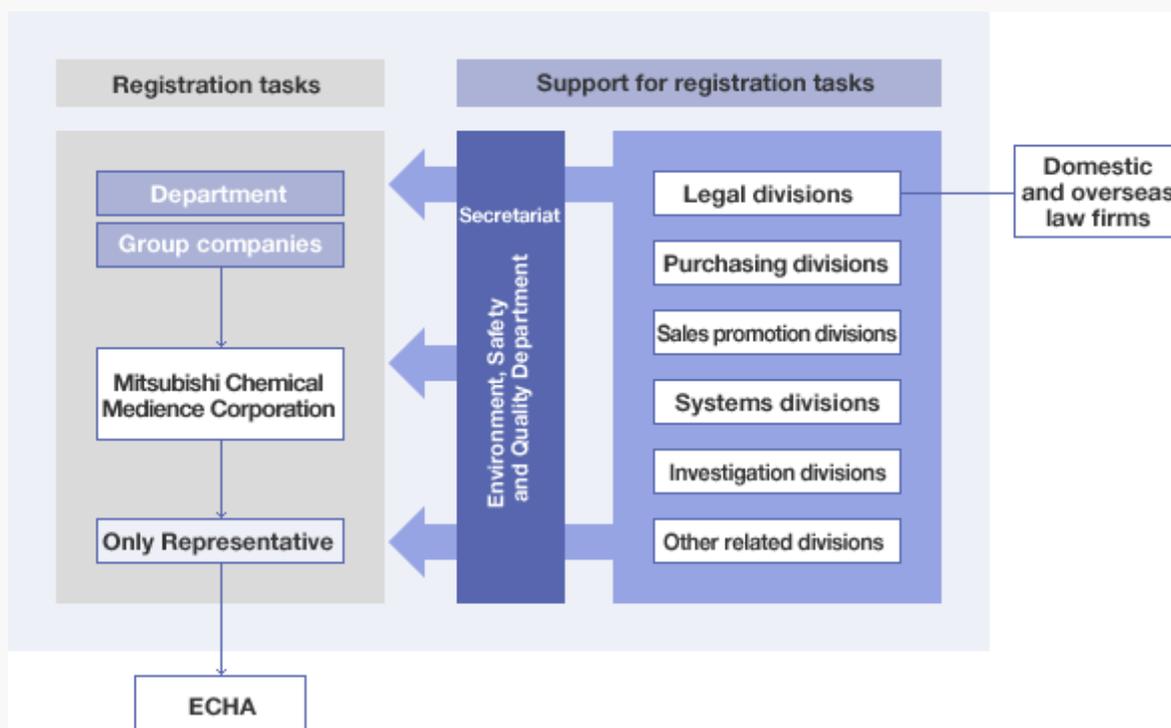
*ECHA: European Chemicals Agency

Activities to date

1. Building project organization for the Mitsubishi Chemical Group to comply with REACH

REACH is extremely complicated and requires extensive knowledge and comprehension. In some instances, one company alone may not fully comply with the regulations. Therefore, in 2006, Mitsubishi Chemical configured the MCC Group REACH Project, a cross-sectional organization of the Mitsubishi Chemical Group. The organization aims to strengthen knowledge and comprehension on REACH through sharing of information, and the Environmental Safety and Quality Department of Mitsubishi Chemical serves as its secretariat.

● Organization of MCC Group REACH Project



2. Held briefings for the entire Mitsubishi Chemical Group for explaining REACH legislation and its guidance, as well as ways to deal with it

The project secretariat has held briefings every two months to deepen understanding on the extensive REACH regulations and various types of guidance issued by the European Chemicals Agency (ECHA) for ensuring compliance. To fully comply with REACH, each concerned party needs to think of specific measures and take action, so the briefings held discussions while proposing ways to communicate with customers, specific items in preparing for registration and other matters of caution, in addition to explaining the provisions. Briefings continue to be regularly held.



Briefing organized by the project secretariat

3. Established a helpdesk for Departments and Group companies to consult with

Substances need to be dealt with one by one in the registration work required for REACH. Since procedures and issues differ with each case, the project secretariat offers individual consultation in serving as a helpdesk for the Mitsubishi Chemical Group, and answers customers' questions and provides them with explanations.



Q&A session at the helpdesk

4. Opinion exchange with an only representative about registration activities and current situations in the EU

For a manufacturer from outside the EU, an only representative is essential not only for complying with REACH but also for maintaining and expanding business in the EU. The Mitsubishi Chemical Group exchanges detailed information about specific action items and plans for registration with the only representative, and has participated in the formation processes of the Substance Information Exchange Forum (SIEF) on substances to be registered and technical discussions held therein.

5. Information exchange among members of supply chain

To comply with the REACH regulation, the key issues are in how rationally and efficiently we can collect information on uses and applications of substances in Europe, which is necessary for registration. We have almost no experience in information exchange among members of the supply chain, which starts with raw material manufacturers and reaches the final users via manufacturers, retailers and logistics operators. Currently there are no official guidelines or tools, so we have endeavored to exchange information with customers in relation to REACH, at the same time explaining the REACH requirements to them and taking inventive actions such as generalizing information on uses and applications.

6. Cooperating with activities of chemical and other industrial organizations such as Japan Chemical Industry Association

Mitsubishi Chemical participates in the working group of the Japan Chemical Industry Association for dealing with REACH, in efforts to understand the provisions and find solutions to questions and issues. We have also strived to communicate as much information as possible and share recognition by actively giving lectures offered by various industrial associations, with the hope of providing our REACH activities as a example of practice.

7. Information exchange for registration work through domestic consortium activities

In relation to the registration of certain general-purpose chemical substances, some of the companies in our industry involved with registration have established several domestic consortiums for information exchange. Mitsubishi Chemical has also presented opinions at consortiums in the EU, as a domestic consortium leader for certain substances. This made it possible for us to complete the registration procedures for existing substances without any trouble by the registration closing date of November 30, 2010, fulfilling the aim of these activities.

Together with Stakeholders

Together with Stakeholders

Basic concept

● Basic policy in communications with stakeholders

	Basic policy
Customers	We aims not only to offer products and services that are safe and of high quality; it also aspires to build even an better society together with its customers, by working with them to solve their issues and achieve their ever more diverse and complex targets.
Business Partners	Recognizing all entities trading with our company as business partners, we strives to build a mutually trusted relationship and foster fair and appropriate trading practices with them.
Employees	Mitsubishi Chemical sincerely associates with each of its employees and strives to establish rewarding workplaces where each employee's abilities may be utilized to the utmost, and where employees can work with enthusiasm by mutually respecting diverse values.
Regional communities and greater society	Understanding our responsibility of being a good corporate citizen, we make sure that our activities live up to the demands and expectations of society and people.

Together with Stakeholders

Together with Customers

Basic ideas

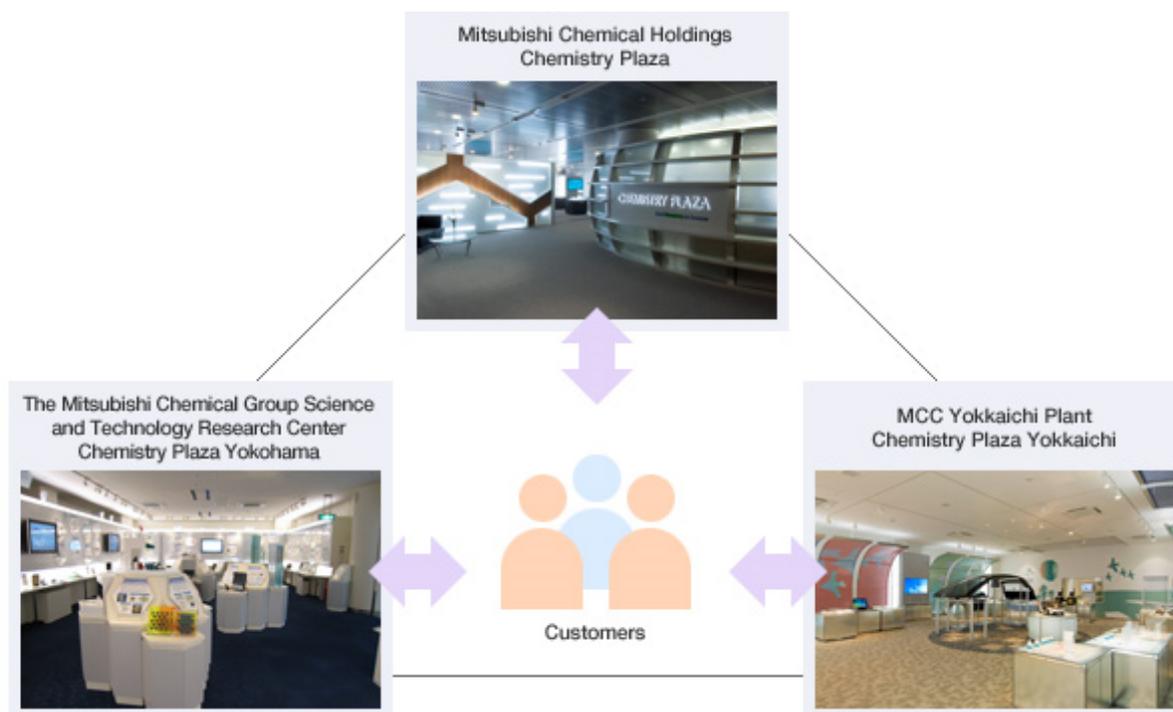
The Mitsubishi Chemical Corporation (MCC) Group aims not only to offer products and services that are safe and of high quality; it also aspires to build even a better society together with its customers, by working with them to solve their issues and achieve their ever more diverse and complex targets.

Promoting dialogues through Chemistry Plaza

Mitsubishi Chemical Holdings has established Chemistry Plaza, a showroom that functions as a starting point for collaboration with customers and the creation of solutions. Here, Mitsubishi Chemical Holdings products, technologies, and application examples are displayed to convey the comprehensive capabilities of the Group. Located within the head office building, the Plaza features more than 1,000 materials for presenting products and technologies, and more than 200 types of exhibits. It drew 4,082 visitors in fiscal 2010.

In addition, MCC has established two other Chemistry Plazas. One is Chemistry Plaza Yokohama, located in Mitsubishi Chemical Group Science and Technology Research Center (Kanagawa Prefecture). It houses the kind of cutting-edge technologies and platform technologies that are only available at an R&D facility. The other is Chemistry Plaza Yokkaichi, located in Yokkaichi Plant (Mie Prefecture), which principally displays resin products and technologies to convey our quality manufacturing capabilities. These Chemistry Plazas collaborate when working on common themes to help customers find solutions, while clearly demonstrating their individual positions and features.

- Chemistry Plaza, the solution network for solving customers' problems

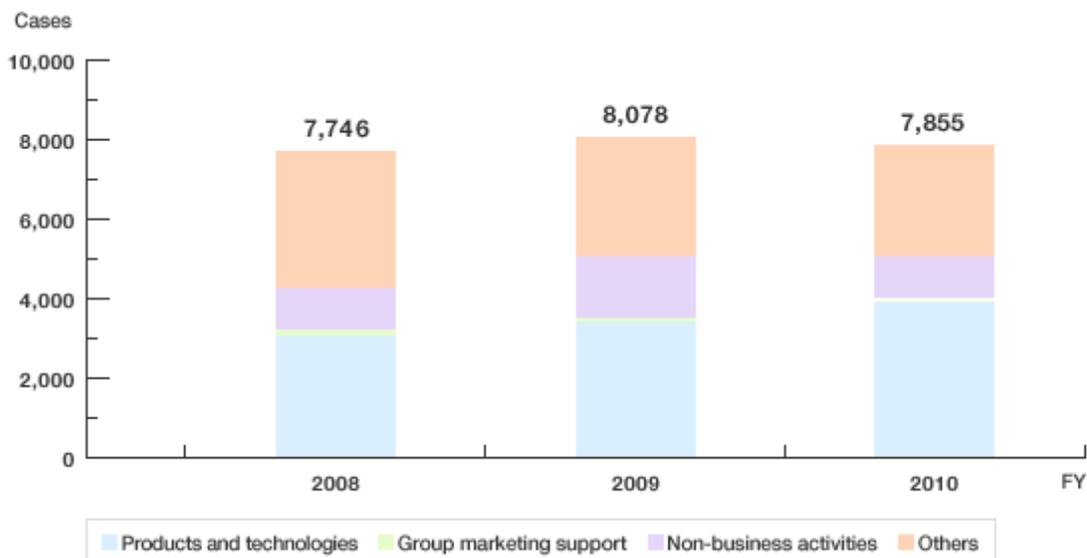


Responding to customers' needs and inquiries by making full use of the information held by the Group

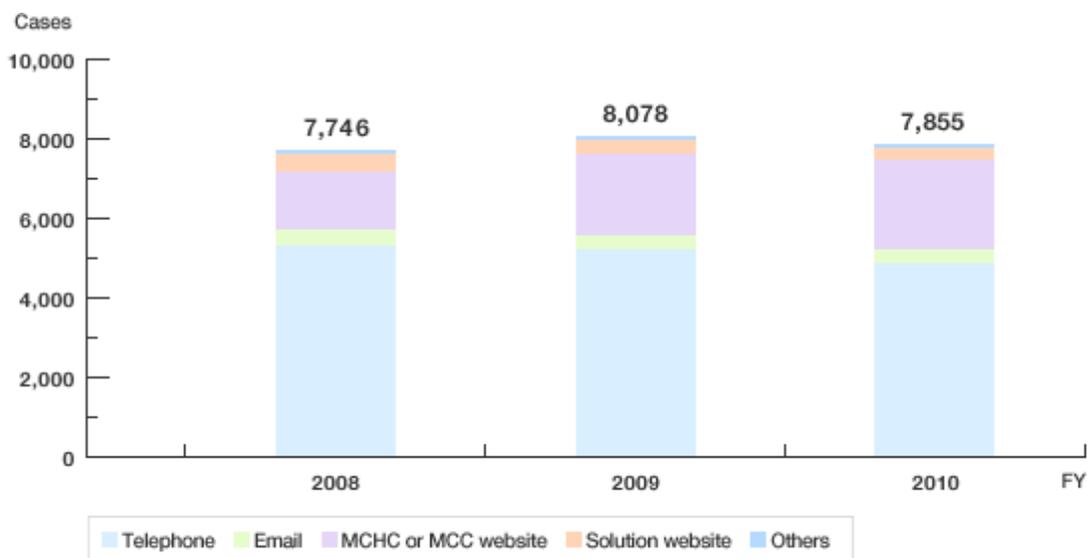
In 2002, seeing to better respond to the needs and inquiries of customers concerning our products and technologies, we established the Information Center. This was a first for a comprehensive chemical products manufacturer. Utilizing product databases and networks that cover the Mitsubishi Chemical Holdings Group, we have proposed optimum solutions to the diverse issues of our customers, responding to a broad array of inquiries. During fiscal 2010, 7,855 inquiries were received, of which 3,864 related to products and technologies, 191 to requests for Group marketing support, 1,047 to non-business activities, and 2,753 to other matters.

It is worth noting that in fiscal 2010 inquiries relating to **DIAION**, ion exchange resin series, which are used for treating drains and purifying water, accounted for a little over 2% of overall inquiries (about 5% of inquiries related to products and technologies). The number of inquiries also increased for photovoltaic modules, which the Mitsubishi Chemical Holdings Group regards as a business of the future, focusing efforts on both marketing and development. This reflects the rising awareness resulting from extensive media coverage on the organic photovoltaic modules of MCC, as well as growing interest and expectations.

● Breakdown of inquiries (Fiscal 2008 to 2010)



● Channels for inquiries (Fiscal 2008 to 2010)

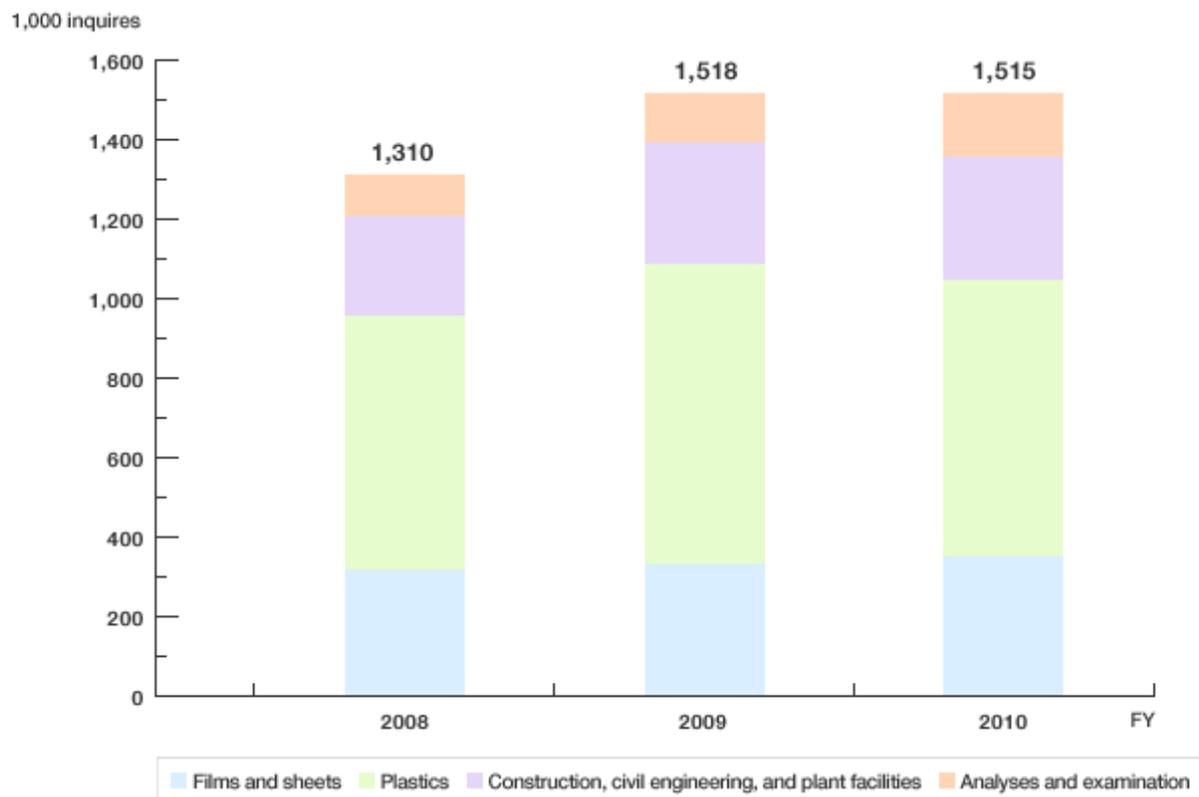


*MCHC: Mitsubishi Chemical Holdings Corporation MCC: Mitsubishi Chemical Corporation

Configured product information search system that links customers with Group companies

As the point of contact for solutions that link our customers with the Mitsubishi Chemical Holdings Group, our Information Center operates solution websites for products and services that are being used in diverse locations for varied applications, covering each of the following four areas: films and sheets; plastics; construction, civil engineering, and plant facilities; and analyses and examination. Between 100,000 and 750,000 accesses are made to each website each year, demonstrating their utility as a convenient tool for customers to gather information, and as a starting point for commercial negotiations.

● Number of accesses to solution websites (Fiscal 2008 to 2010)



- ▶ [Films and sheets \(Japanese only\)](#)
- ▶ [Plastics of the Mitsubishi Chemical Group \(Japanese only\)](#)
- ▶ [Construction, civil engineering, and plant facilities \(Japanese only\)](#)
- ▶ [Analyses and examinations in the Mitsubishi Chemical Group \(Japanese only\)](#)

Together with Stakeholders

Together with Business Partners

Basic ideas

For the Mitsubishi Chemical Group to continue its daily business activities, the cooperation of numerous business partners is essential. These partners include raw materials suppliers, plant maintenance companies, logistics companies, and subcontractors working onsite. Mitsubishi Chemical views those companies that cooperate with its operations as business partners, and aims to build trust while continue growing together with them. We have also established purchasing guidelines to ensure fair and equitable transaction practices.

Purchasing Guidelines (Excerpted)

Principles

1. Purchasing competitive materials, equipment, and services
2. Openness and fairness
3. Partnerships and mutually beneficial relationships

Codes of Conduct

1. Compliance with laws and regulations
2. Fairness, impartiality, and transparency in decision-making process
3. Clear distinction between private and business relationships

Requests for Suppliers

1. Compliance with laws, regulations, and social norms

We request each business partner to comply with the following laws, regulations and social standards, in all countries and regions in which they operate.

- (1) Compliance with laws and regulations concerning the manufacturing and distribution of raw materials.
- (2) Compliance with laws and regulations concerning labor, health, and safety, and development of proper working environments.
- (3) Prohibition of racial and sexual discrimination, and respect for the dignity of each employee.
- (4) Prohibition of bribery and unfair proceedings.
- (5) Compliance with environmental laws and regulations.

2. Promoting sound business management

3. Consideration for the environmental issues

4. Non-disclosure of confidential information

▶ The full text of the purchasing guidelines is available here. [🔗](#)

Ensuring full compliance with the Subcontractor Act

Mitsubishi Chemical conducts transactions pursuant to the Subcontractor Act Compliance Rules established in April 2008. The Subcontractor Act Compliance Rules clearly establishes an organization for complying with the Subcontractor Act, and specifically stipulates the intentions and scope of application of the Subcontractor Act and compliance matters in tasks related to order placement and payment.

During fiscal 2010, we urged employees to participate in seminars offered by outside parties, in addition to in-house study meetings, to ensure full compliance with the matters stipulated by the Subcontractor Act Compliance Rules. Also, plant purchasing departments were audited to confirm compliance with the Subcontractor Act. Study meetings and audits will continue to be held during fiscal 2011 as well, to ensure compliance with the Subcontractor Act.

Held briefing on CSR to business partners

Mitsubishi Chemical aims to promote CSR activities together with its business partners, to help build a sustainable society. As part of these efforts, we have established Green Information Management System in 2006, to comprehensively manage and convey information on chemical substances contained in products with the cooperation of our business partners. Also in 2006, purchasing guidelines were established for building fair and equitable relations with business partners, and we have asked them to promote their own CSR initiatives.

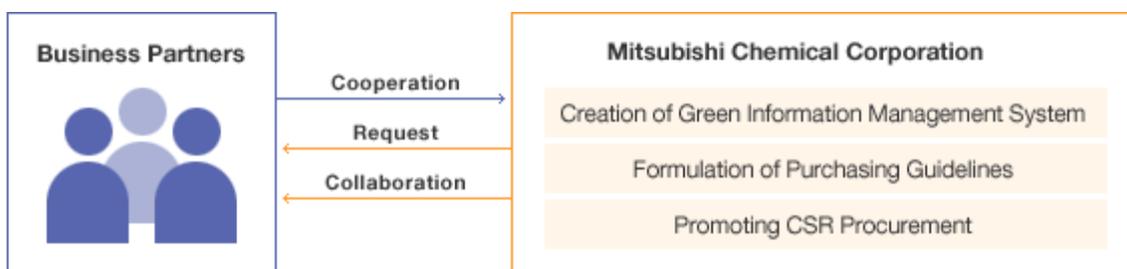
In fiscal 2010, a CSR briefing for business partners was held to explain the following areas to 170 raw materials manufacturers: (1) Mitsubishi Chemical's concept on CSR; (2) promoting CSR by business partners; and (3) requesting cooperation with the CSR questionnaire on ideas and activities of CSR by Mitsubishi Chemical. The briefing was also attended by business partners of our Group companies Japan Polychem Corporation and Dia Packaging Materials Co., Ltd.



CSR briefing to business partners

The CSR questionnaire was distributed to business partners accounting for 90% or more of purchases by value from our purchasing divisions and plant purchasing departments, including the 170 companies that participated in the briefing. More than 90% responded, or an average of 34 out of 36 points. A similar questionnaire was also distributed to business partners involving materials. Overall, Mitsubishi Chemical Corporation and Mitsubishi Chemical Engineering Corporation asked a total of 400 companies for their cooperation. Based on the results of CSR questionnaires, we plan to promote CSR activities further while feeding back the aggregation results to business partners.

Working with Business Partners to Create Initiatives Designed for a Sustainable Society



Conducting a general safety rally with our partner companies

In May 2010, the Regular Maintenance (Periodical Maintenance) Construction General Safety Rally was held at the Kashima Plant of Mitsubishi Chemical. The rally aims at ensuring safety during the periodical maintenance of chemical plants. About 2,600 people participated from the Mitsubishi Chemical Group and partner companies. On the day of the rally, the plant manager gave a speech and representatives of the health and safety management company and business partners pledged to ensure safety. Then, all participants firmly recited the safety slogan, confirming their resolve to work safely and enhance safety awareness to achieve the goal of zero accidents.



All participants recited the safety slogan

Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

Together with Stakeholders

Together with Employees

- ▶ Basic approach
- ▶ Training people capable of thinking and acting independently
- ▶ Promoting diversity for developing a corporate culture that makes work rewarding for anyone
- ▶ Promoting reduction of total working hours to attain work–life balance
- ▶ Continuing with boosting education and awareness on human rights
- ▶ Configuring productive labor–management relations

Basic approach

The Mitsubishi Chemical Group believes that for the sustainable development of a business, the Company and each employee need to build autonomous relations based on trust and duty while fulfilling respective responsibilities, with a focus on human resources development, and the development of a good organization and culture. Based on this concept, we associate with each employee sincerely and offer a rewarding working environment that suits personal levels of development, so that the capacities of each member are brought out to the fullest extent. These efforts emphasize human resources development, organizational and cultural development, and support for attaining work–life balance.

Personnel strategies for sustainable development of companies

Kazuyuki Futamata

Executive Officer and General Manager of Human Resources Dept.

Mitsubishi Chemical Corporation



The Mitsubishi Chemical Group's MCC *APTSIS 15* medium–term management plan indicates dealing with business structure reform and with globalization as issues of business management. These are also regarded as important themes within personnel strategies, and specific action plans have been formulated and implemented.

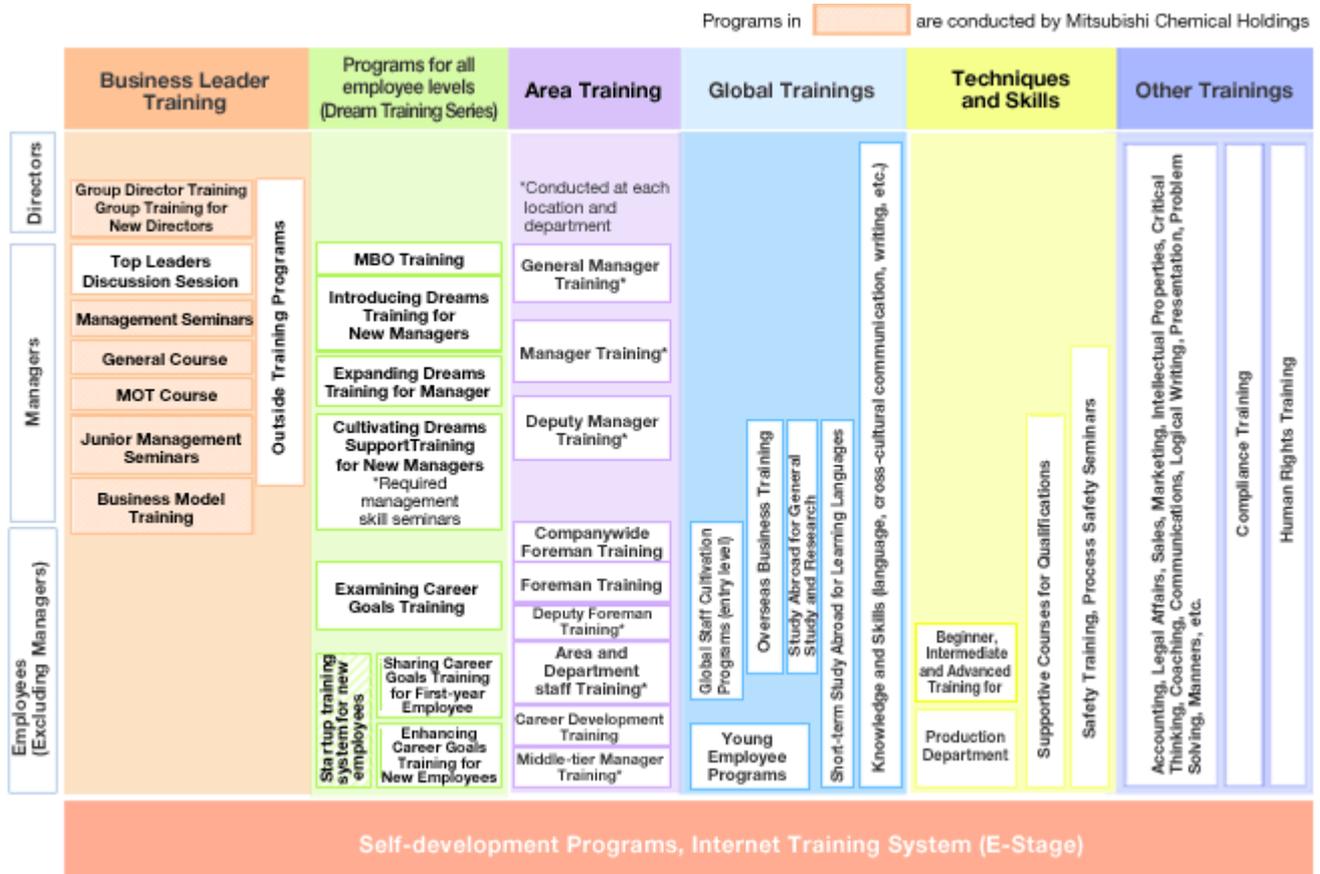
In dealing with structural reforms, personnel will be strategically assigned to increase competence in our business activities while optimizing balance among staff. For globalization, efforts are underway for cultivating human resources with a global vision and ability to act, capable of realizing and managing mergers and acquisitions, alliances and partnerships with overseas companies—areas where increased activity is expected in the future. At the same time, domestic personnel are also being cultivated and utilized.

Ongoing efforts are being made to consolidate the capabilities needed on the frontlines of worksites, as well as the foundations for organizational revitalization. We seek to secure human resources for sustainable development, and to strengthen the organizational ability to foster and utilize these human resources.

Cultivating human resources capable of thinking and acting independently

The Mitsubishi Chemical Group believes it is essential for all its employees to continually strive to improve their abilities, take on challenges with enthusiasm, and generate new value and innovation. To achieve this, by offering Dream Training Series and other programs for separate tiers of workers, our Group supports medium- to long-term career development to suit each employee's level of development and position.

Employee training system of Mitsubishi Chemical Group



Enlarged view

Fostering the next generation of executives

The Mitsubishi Chemical Group participates in the Mitsubishi Chemical Holdings Business College: General Course aimed at the early development of the next generation of executives. Employees recommended by respective Group companies participate in this program for fifteen months to acquire skills useful for actual business operations, strategy formulation and implementation, through business administration literacy education, case studies and research on specific topics.

For example, in the Lessons by Executives part of the program, current executives give lectures based on their experiences, then join the participants in a discussion. In this way, the aspirations of the executives and current issues are conveyed to and shared by future generations, and participants are expected to identify practical actions they should make.

After the seminar, employees who participated are assigned to positions and duties that allow them to practically apply what they have learned and expand their experience, and which promote their growth.

Fostering human resources for business globalization

The Mitsubishi Chemical Group recognizes dealing with globalization as a management issue. Active efforts are underway for globalizing businesses, by establishing overseas production bases and expanding overseas businesses mainly in China, India, and other emerging economies. New attempts were made in fiscal 2010 in addition to conventional internationalization and other training, for the purpose of cultivating human resources capable of dealing with mergers and acquisitions and configuration of alliances and partnerships.

Specifically, the new Global Staff Cultivation Program (entry level) was started for young employees who have no experience in overseas duties. This six-month program consists of two domestic and one in-field seminar. In the in-field seminar, trainees visit local corporations in Singapore, Indonesia, and other areas, attend lectures by executives and participate in discussions with regional staff to familiarize themselves with the frontlines of business. In fiscal 2010, 16 young employees who have been with the company for three to 10 years attended the program.



Local training at Melak Plant in Indonesia

One participant commented that, "I learned that global personnel are required to perform in the same way anywhere, under any environment. I want to take this opportunity to broaden my views and try expanding my field of experience in the next five years, and the next 10 years."

In addition, Mitsubishi Chemical will provide training programs to comply with the United Nations Global Compact* at its overseas subsidiaries.

* The Ten Principles of the United Nations Global Compact, enacted in July 2000, were proposed by (then) Secretary-General Kofi Anan of the United Nations at the 1999 World Economic Forum in Davos, Switzerland. Businesses around the world are to comply with them regarding human rights and labor, environment and anti-corruption.

Offering opportunities to take on challenges and boost awareness

In addition to usual personnel transfer and rotation among divisions, Mitsubishi Chemical has established a system where employees may declare their desires related to their duties and career and transfer to desired areas.

The system works in three ways: open recruitment where programs are offered in-house and those wishing to participate apply, in-house free agencies where employees make a request for a transfer to another duty, and in-house internships where employees are transferred to another duty for two to three years for training on the assumption they will return to their previous duty. In fiscal 2010, attempts were made for improving users' convenience by unifying the main contacts and trying more effective measures for publicizing the system among employees in order to expand its use.

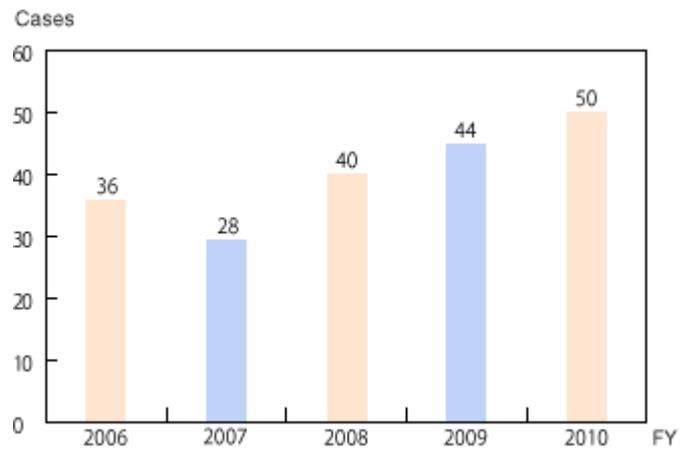
A career counseling system adopted in fiscal 2006 also enables employees to independently consider their career path. Qualified career counselors are assigned in-house and other employees may consult with them at any time about their careers. The system offers awareness-building opportunities for employees who are seeking to form their career path. Individual guidance is given from the viewpoints of taking inventory of one's career so far and of rediscovering oneself.

● Actual use of open recruitment, in-house free agencies, and in-house internships

Title		2008	2009	2010
Open recruitment	Programs offered (people)	74	17	19
	Applicants (people)	37	42	25
	Accepted (people)	12	10	6
In-house free agent (people)		2	1	0
In-house internship (people)		6	1	1

FY

● Number of people who consulted career counselors



Promoting diversity for developing a corporate culture that makes work rewarding for anyone

The Mitsubishi Chemical Group proactively promotes diversity for developing a corporate culture where all employees mutually respect each others' values and find work rewarding.

Proactively supporting enthusiasm and skills development of female workers

Aiming to be a company where all employees work to their fullest capacities regardless of their gender, as well as having appeal as a place where energetic workers come together, Mitsubishi Chemical in 2008 adopted the Women's Initiative & Work Innovation (WIN-WIN) Plan. Using the targets stated in the plan as guidelines, Mitsubishi Chemical continues to offer various supporting measures that women need for building their career and promoting work-life balance, from the three viewpoints of human resources development, organizational and corporate cultural development, and support for maintaining work-life balance. Beginning in fiscal 2010, three systems were also established: leave while accompanying the spouse's overseas assignment, temporary suspension of transfer, and declaration of desired place of work. These systems were in high demand among female workers, and were adopted to help them attaining a work-life balance when they get married and wish to continue working.

Supporting measures are also being offered for the skills development of female workers. In fiscal 2010, two seminars for female employees were held, along with six career training sessions. The latter offer opportunities for female employees to review their career, understand their strengths and weaknesses, develop a mid-term career plan, set targets according to the plan, consider career paths suited to their goals, and think about ways to motivate themselves.



Career training

Target values of Women's Initiative & Work Innovation (WIN-WIN) Plan (%)

Item		2008	2009	2010	Target values*
Ratio of women among management		4.4	4.6	4.6	20 or more
Ratio of women among new hires	Clerical	30	32	41	40 or more
	Engineering	9	9	16	20 or more

* The target for ratio of women among management is for fiscal 2025 and for women among new hires is for fiscal 2015.

Work-life balance support systems introduced in fiscal 2010 (both male and female employees are eligible)

1. Leave for accompanying spouse's overseas assignment

Allows employees to take leave of up to three years when accompanying the spouse's overseas assignment.

2. Temporary suspension of transfer

Allows employees to be exempted from transfer that accompanies relocation and to continue working at the current place of work for a specified period while raising a child.

3. Declaration of desired place of work

The system allows employees to ask to be transferred to the spouse's place of assignment when the spouse is transferred to a remote location and work-life balance is hindered or there are other family reasons.

* The above and other systems for supporting work-life balance, childcare, and nursing care may be used for longer than the statutory periods.

● Status of use of systems for work-life balance

FY

System	2008	2009	2010
Maternity leave before and after childbirth (people) ¹	61 ³	67 ³	62
Child-raising leave (people)	103 ³	123 ³	126
Shorter work hours while raising a child (people)	122	192	211
Nursing care leave (people)	4 ³	0 ³	2
Shorter work hours while providing nursing care to family members (people)	5	1	1
Fertility treatment leave (people)	0	0	1
Subsidy for fertility treatment (cases)	30	30	29
Leave to accompany spouse's overseas assignment (people) ²	-	-	3
Temporary suspension of transfer (people) ²	-	-	1
Declaration of desired place of work (people) ²	-	-	5

¹ Only female workers may take maternity leave before and after childbirth. Both male and female workers are eligible for other support systems.

² These are the systems for supporting work-life balance that were introduced in fiscal 2010.

³ In this year's CSR Report, numbers of Mitsubishi Chemical employees who used the systems (including the Group companies staff) are indicated. For this reason, the figures differ from those indicated in last year's CSR Report.

VOICE

Using the new system of leave for accompanying spouses' overseas assignment

Kyoko Nishino
 Battery Materials Division
 Mitsubishi Chemical Corporation

I chose to take leave to accompany my husband on his assignment to the United States starting August 2011. I am glad to have this chance because I wanted to continue working with the company. While on leave, I plan to do some study that had always been my goal, but that I couldn't do until now because of my busy schedule. After returning, I hope to continue my previous duties (sales of battery machines), yet I also hope to try other duties utilizing the knowledge and experience I gain through my studies. I would also like to take time to think over my career while I am on leave.

VOICE

Taking childcare leave and working shorter hours

Aki Kanno
Human Resources Dept.
Mitsubishi Chemical Corporation



I took childcare leave for a year and four months, from December 2009 to April 2011, and was reinstated in May 2011. My duties changed a bit after coming back, but my experiences proved useful in my new duties. I am currently working under the shorter work hour system for childcare. I sometimes find it difficult to complete all my work within the shorter hours, but I try to plan ahead and carry out my work whenever possible. I hope to continue maintaining a balance between work and childcare by utilizing various systems and asking for cooperation from those around me.

Promoting diversity in recruitment

Mitsubishi Chemical promotes diversity in its recruitment activities, with the hope of revitalizing the organization by addressing changes in business structure and globalization, and by assembling diverse human resources. Specifically, hiring local human resources is promoted in Japan and at overseas companies as a measure in response to globalization. Application eligibility has also been widened for university graduates, treating them as new graduates for up to three years after graduation. We are also making growing use of mid-career recruitment.

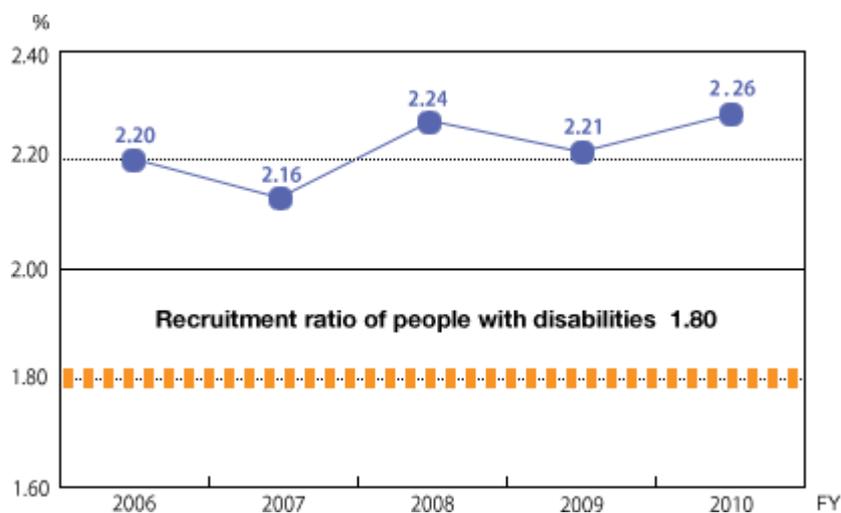
In fiscal 2010, 71 new graduates were hired, three of whom were foreigners. After recruitment, and irrespective of their nationality, they are given the support to become outstanding contributors to the future for the Company, including the same rotation and training programs and the same treatment that Japanese employees receive.

Helping people with disabilities bring out their skills

Under a philosophy of normalization, in 1993 we have established a special subsidiary, Kasei Frontier Service, Inc., for helping people with disabilities take on roles with greater responsibility, developing their capabilities, and contributing to society. At the same time, we have sought to improve their working environment. The subsidiary's major scope of businesses include information processing services, general printing services and work consigned by Mitsubishi Chemical. As of April 2011, 81 people with disabilities (of a total of 124 employees) work at the Kurosaki head office and Yokkaichi branch office in ways that suit their respective skills.

The recruitment ratio of people with disabilities as of fiscal 2010 is 2.26%. Since attaining a statutory recruitment ratio of 1.80% in 2001, we have maintained a level significantly above the statutory requirement each year.

● Change in recruitment ratio of people with disabilities



* Includes companies to which Mitsubishi Chemical's system of disabled person employment ratio applies

VOICE

Filling our company with a bold spirit where people with disabilities and people with physical disabilities work in harmony

Kenichi Sato
 Managing Director
 Kasei Frontier Service, Inc.



Kasei Frontier Service, Inc. considers both the tangible and intangible aspects of the working environment to enable people with disabilities to work with enthusiasm. Yet we have never treated people with disabilities in a special way. This is because we hope to be a group with a bold spirit where people with disabilities and those without impairments work in harmony.

In our management, we are continually mindful of making the company an organization we can be proud of, as a team of human beings. For this purpose, this must be a company where anyone can work comfortably, in a friendly but competitive environment. On the other hand, we need to face the reality that, as we age, we experience different phenomena. Even under these circumstances, we need to develop working environments where each of our workers feel joy when they work and have a sense of participating in and contributing to society.

VOICE

In charge of supporting visually disabled people, at a friendly workplace

Tadayoshi Nakamura (visually disabled)
10A Center, Solution Service Division
Kasei Frontier Service, Inc.



I am mainly in charge of supporting visually disabled workers in a friendly and lively work environment, creating barrier-free websites, translating into Braille, making Braille business cards, and serving as an adviser and speaker when called upon by public organizations. In the future, I hope to be in charge of tasks supporting workers with mental disabilities as well.

Utilizing skills of senior workers effectively

Mitsubishi Chemical has established the Senior Partner System for rehiring enthusiastic and able employees after they reach retirement age. In fiscal 2010, 188 (about 80%) of 227 such employees were rehired under the system. They use their skills as experienced workers and train younger workers to pass on the expertise and techniques they have acquired in their careers.

Promoting reduction of total work hours for attaining work-life balance

The Mitsubishi Chemical Group believes that maintaining work-life balance improves productivity and motivation for both men and women. Based on this thinking, Mitsubishi Chemical has attempted to reduce total work hours so that all employees can lead healthy and satisfying daily lives. In fiscal 2010, Labor-Management Monitoring Committee meetings were held five times. The company and labor union confirmed the situation and exchanged ideas for resolving various issues, with the aim of reducing total work hours.

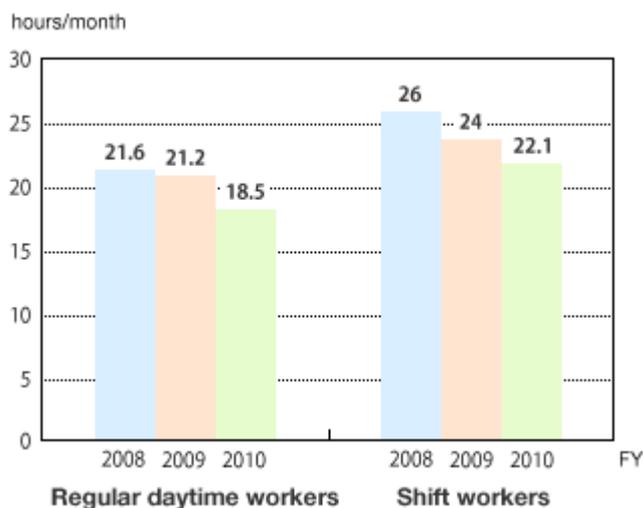
For eliminating long work hours

Mitsubishi Chemical attempts to eliminate excessive work hours by ensuring that division managers properly understand the duties and work hours of subordinates and maintain appropriate duty allocation within the workplace, so that certain employees are not assigned excessive duties.

Reducing overtime and holiday work hours by raising work efficiency

Mitsubishi Chemical has a number of policies designed to boost work efficiency and reduce overtime and holiday work hours. Examples include simplification of in-house materials, reviewing topics of discussion at in-house meetings and their timing, setting a no-overtime day once a week and turning off the lights in the head office at 8:00 p.m. on weekdays. These measures have reduced overtime and holiday work hours to about 20 hours/month on average for general workers in fiscal 2010, indicating that work efficiency has gradually risen. We will continue seeking to reduce overtime and holiday work hours in fiscal 2011 by fundamentally revising the duties assigned to workers.

● Change in overtime and holiday work hours (general workers)

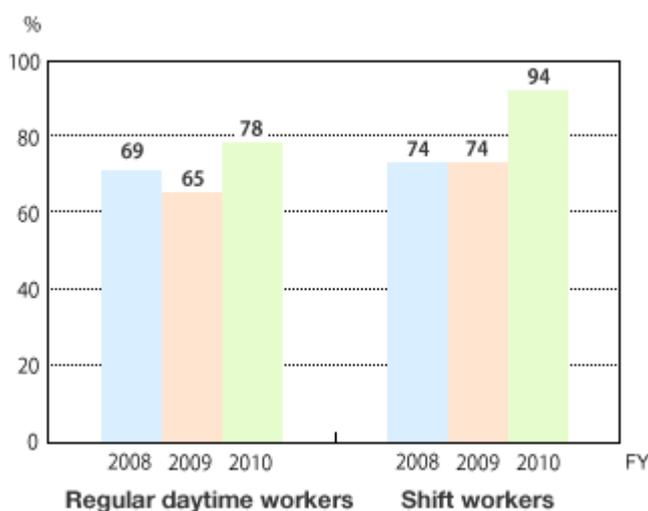


Measures for encouraging employees to take annual paid vacation

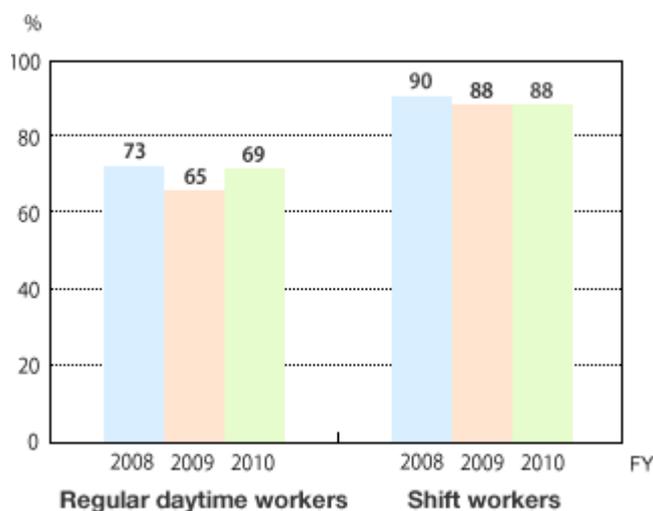
Aspiring to encourage employees to lead well-modulated daily lives with greater leisure, Mitsubishi Chemical is striving to create an environment that allows employees to take planned vacations. Examples include setting planned annual holidays (three days each year) and adopting a life support holiday system. The life support holiday system enables an employee taking two consecutive paid days off to take an additional day off once a year. This enables five consecutive days off if a weekend is included, encouraging employees to take extended holidays. Employees aged 30, 35, 40, 45, 50 and 55 are allowed three extra days off, to take even longer vacations.

We have also established volunteer holiday (five days), volunteer leave (three years), and donor holiday (in the number of necessary days) systems to assist employees doing volunteer work. Following the Great East Japan Earthquake in March 2011, Mitsubishi Chemical has participated in recovery work at affected areas by dispatching employees who responded to the call to take part in volunteer support activities organized by Mitsubishi Chemical Holdings.

● Change in number of paid vacation days taken (general workers)



● Change in the ratio of life support holiday system taken (general workers)



Changes in shift work systems

At the plants of Mitsubishi Chemical, shift workers currently work in three shifts through four groups. However, a study is underway to change to three shifts and five groups or other shift systems, to allow greater leeway for shift workers, taking the nature of duties and plant features into consideration.

● Example of three-shift and five-group system

Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A	1	1	1	1	P	3	3	3	3	P	2	2	2	2	P	P	1	1	1	1	P	3	3	3	3	P	2	2	2	2
B	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	P	3	3	3	3	P	2	2	2	2	P	P	1	1
C	P	3	3	3	3	P	2	2	2	2	P	P	1	1	1	1	D	D	D	D	D	D	D	D	D	D	D	D	D	
D	3	P	2	2	2	2	P	P	1	1	1	1	P	3	3	3	3	P	2	2	2	2	P	P	1	1	1	1	P	3
E	2	2	P	P	1	1	1	1	P	3	3	3	3	P	2	2	2	2	P	P	1	1	1	1	P	3	3	3	3	P

Legend

Shift	Work description
P	Public holidays
1	Shift 1
2	Shift 2
3	Shift 3
D	Daytime

* Employees may take consecutive days off while working the daytime shift

Continuing with human rights awareness-building and education

The Mitsubishi Chemical Group, including its overseas subsidiaries, believes it is essential to conduct business activities in ways conforming to the Ten Principles of the United Nations Global Compact to fulfill its corporate social responsibilities. For this purpose, we have consistently and proactively conducted education and awareness-building on human rights, aiming to deepen correct understanding and recognition of human rights issues and to make us a spiritually rich corporate group that provides agreeable places to work.

In fiscal 2010, group seminars were held for executives and employees working with our Group for reconfirming and understanding the *buraku* issue and eradicating prejudice, as well as preventing sexual, power, and other forms of harassment. Human Rights E-Training is also continuously administered using the company Intranet.

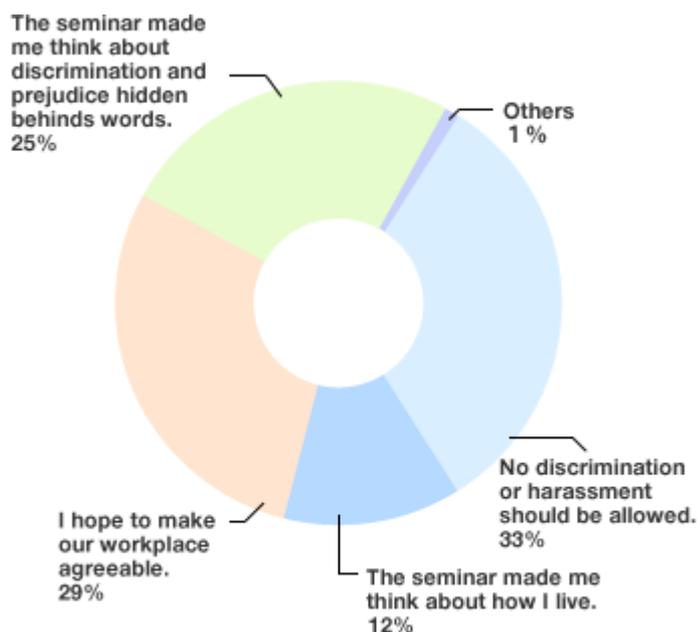
● Education and training on human rights given

FY

Training description		2008	2009	2010
Group seminars	Number of times	441	328	406
	Number of people	10,836	10,049	9,684
Human Rights E-Training	Number of times	4	4	4
	Number of people	12,964	13,930	16,742
Overseas seminars*	Countries	5	1	2
	Number of times	8	4	2

* Includes surveys on overseas human rights situations

● Results of questionnaire after group training in fiscal 2010



Mitsubishi Chemical precludes any and all discrimination in its hiring and selecting employees. Even if infectious diseases such as HIV and gender identity disorder, which have been issues in recent years, are made known after joining the Company, Mitsubishi Chemical takes appropriate steps according to a manual to deal with them, taking careful note of the privacy of the persons concerned.

Building productive labor-management relations

Labor unions exist at the head office (as well as branch offices) and production sites at Kurosaki, Yokkaichi, Naoetsu, Mizushima, Sakaide, Kashima, Nagoya, Tsukuba, and Odawara of Mitsubishi Chemical, which together form the Mitsubishi Chemical Labor Union Federation. The Federation and labor unions do not participate in senior bodies, but pursue a policy of working together with the company. The emphasis is placed on maintaining and strengthening sound labor-management relations, and the two parties meet regularly at biannual management and labor committee meetings.

Some Mitsubishi Chemical Group companies have organized labor unions, and these have all maintained productive labor-management relations.

Roles of Mitsubishi Chemical Labor Union Federation

Yasuharu Kukino

Chairman

Mitsubishi Chemical Labor Unions Federation



The life force of Mitsubishi Chemical undoubtedly lies with the people, and for this reason we believe labor-management relations start with business administration that fully brings out human ability and engenders trust in management. With the aim of further strengthening labor-management relations, our Federation will perform its roles appropriately by conducting activities for linking the frontlines of management and worksites, as management's partner and checking function, and by candidly exchanging opinions at Management Council Meetings and on other occasions.

I am also fully aware that the overarching basis for the Mitsubishi Chemical Group's ongoing prosperity lies in safety and compliance. Our Federation will redouble its efforts to share information and promote exchanges with other labor unions through the Mitsubishi Group Council (Mitsubishi Chemical Holdings Group Labor Union Council) and other organizations, thereby deepening ties among labor unions that gather under the Group.

Together with Stakeholders

Corporate Citizenship Activities

Basic Concept

With the awareness and sense of responsibility of being a good corporate citizen, Mitsubishi Chemical engages in diverse activities involving regional communities, education and culture. We live side by side with regional communities in ways such as having employees of plants and research centers participate in local events, holding opinion exchange meetings with community residents, having employees support volunteer activities and making our welfare facilities available for the local communities. We provide financial support to various organizations and research institutes such as the Dia Foundation for Research on Aging Societies at which problems in aging society are investigated, researched, announced, as well as subsidies to young researchers engaged in research ranging from basics to application focusing on chemistry.

The Mitsubishi Chemical Holdings Group is studying social contribution activities to be pursued continuously by the entire Group, and Mitsubishi Chemical has taken part in these discussions.

Support for areas devastated by the Great East Japan Earthquake and evacuees

Offering portable solar chargers

In April 2011, Mitsubishi Chemical offered 200 portable solar chargers that enable cell phones to be charged by sunlight, to localities devastated by the Great East Japan Earthquake (Iwate, Miyagi, and Fukushima Prefectures). The chargers are being used by people in areas where power supply failed due to the earthquake and by those in outdoor restoration work.



Portable solar cell charger

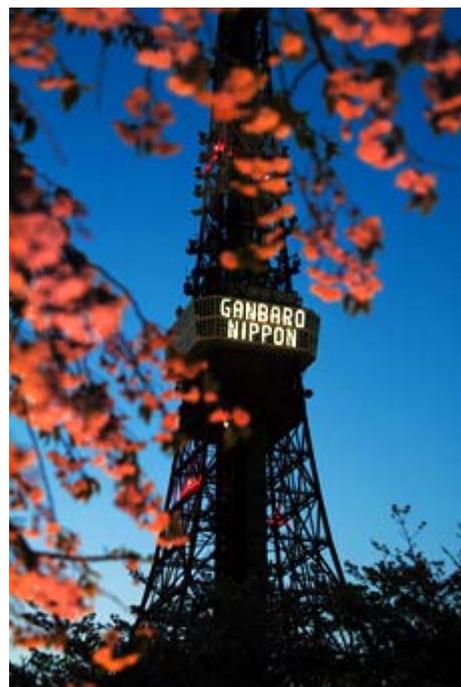
Fundraising activities by employees

Our employees conducted fundraising activities to lend support for areas devastated by the Great East Japan Earthquake. Participation came not only from people at the head office, plants, and branch offices, but also members of domestic and overseas Group companies. Roughly 17 million yen was raised and sent to those in affected areas through organizations such as the Japanese Red Cross Society and Central Community Chest of Japan.

Supporting the Message of Light event at Tokyo Tower

Mitsubishi Chemical offered a solar power lighting system for the Message of Light event held at Tokyo Tower (organized by Nippon Television City Corp; with cooperation from Motoko Ishii Lighting Design Inc.). The event was held with the hope of providing cheer for those who suffered damage from the Great East Japan Earthquake and those in the Tokyo Metropolitan area feeling a loss of vitality in the city due to the power-saving efforts.

The event was held twice, and during the first phase from April 11 to 16, 2011, the message "GANBARO NIPPON" was lit on the Tokyo Tower. During the second phase from April 22 to May 10, a four-color, heart-shaped illumination was lit on the four sides of the Tokyo Tower observation deck with the project title "Message of Light from the Heart – Bringing Our Hearts Together." All illumination was powered by Mitsubishi Chemical's solar-powered lighting system.



The message "GANBARO NIPPON" lit on Tokyo Tower

Social contribution activities in the International Year of Chemistry

The United Nations General Assembly has decided to make the year 2011 the International Year of Chemistry, commemorating the 100th anniversary of Madame Curie receiving the Nobel Prize in Chemistry. Mitsubishi Chemical conducted social contribution activities for further advancing chemistry and widely disseminating and building awareness on chemistry within our society.



International Year of
CHEMISTRY
2011

The Traveling Science Class visited elementary school fifth and sixth graders (head office area)

The Traveling Science Class of the head office of Mitsubishi Chemical visited the Shiba Elementary School in Minato Ward in February 2011 to offer chemistry lessons to fifth and sixth graders. Children experienced making fruit-based batteries, which use zinc and copper as electrodes and lemon, apple, and other fruit juices as electrolyte. The participating children showed a great deal of interest as they spoke with each other wondering if a battery would really work using fruit. Schoolteachers requested that we continue holding these classes and we plan to make similar activities in fiscal 2011.



Children taking part in an experiment with fruit-based batteries

The Traveling Science Class visited elementary school for fifth graders (Kashima area)

In January and February 2011, our Traveling Science Classroom visited four elementary schools in the neighborhood of the Kashima Plant in Kamisu City, Ibaraki Prefecture, to provide chemistry lessons for fifth graders. Such classes have been held since 2000 to forge communications between the plant and local communities, and for conveying the excitement of chemistry to local elementary school children.

In fiscal 2010, a total of 40 workers participated, mainly R&D Center members who led the classes. Classes were held for four days under the topics "magic powder" and "let's make snow." In the lesson on magic powder, a water absorption experiment was done using Aqua Pearl (super-absorbent polymer manufactured by San-Dia Polymers, Ltd.) In the lesson for snow-making, children took part in experiments for making crystals of salt and other substances. The children who participated seemed enchanted by the mysterious chemical phenomena, and listened intently to lectures from the instructors. Preparations are underway for the lessons to be offered in fiscal 2011.



Greatly interested in mysterious chemical phenomena

Science class held during local festival in Kurosaki (Kurosaki area)

In October 2010, Mitsubishi Chemical held a chemistry class during the 22nd Chikuzen Kurosaki Town Festival in the Kurosaki area centered on Kurosaki Central Park in Kitakyushu City, Fukuoka Prefecture. This is the seventh year we have held science classes during the Festival, with workers of the Kurosaki Plant serving as instructors every year. In fiscal 2010, experiments were done for making an aromatic substance from Aqua Pearl (super-absorbent polymer manufactured by San-Dia Polymer, Ltd.), and making slime from laundry starch. Both classes were hugely popular among the children. An employee who worked as an instructor noted emphatically, "I can't forget the children's surprised expressions. I want to continue working to provide dreams for children."



Chemistry class where parents and children gathered

Participated in the 2010 Youngster's Science Festival in Kurashiki (Mizushima area)

In November 2010, Mitsubishi Chemical Mizushima Plant and two Group companies presented exhibits in three booths at the 2010 Youngster's Science Festival in Kurashiki. Mitsubishi Chemical conducted an experiment for making slime from laundry starch, under the title "Let's make sparkling slime." One of the Group companies, TM Air Co., Ltd., offered an opportunity to witness a super low temperature (-196°C) by using liquid nitrogen. Another Group company, MC Humanets, performed an experiment using a toy made of PET bottle that floats and sinks in water.

A large number of children participated in the experiments, with keen interest. Mitsubishi Chemical hopes to foster interest in chemistry among children through such experiments.



Children surprised to see the super low temperature (-196°C)

Supporting young designers through Competitive Awards for graduation projects

Mitsubishi Chemical has supported the Mitsubishi Chemical Junior Designer Award (MCJDA) since fiscal 2006, for supporting young designers and promoting design. MCJDA is the only Award in Japan for graduation projects of students aspiring to be leading designers, in all areas of design including product, graphic, fashion, multimedia, packaging and design studies. Through MCJDA, we strive to create opportunities to find promising young designers and introduce them to the public. We usually issue a call for works in January, and announce the award winners and exhibit the winner's project in the fall.

In fiscal 2010, the 10th* awards, 304 works were sent in, the largest number yet. Of these, 14 won award for their uniqueness, representing a great variety.

* This is the fifth awarding since the title changed to MCJDA because of changes in supporting companies



2010 MCJDA Awarding Ceremony



Oritsunagu Mono (by Takayuki Hori) awarded the 2010 MCJDA Grand Prix

Contribution to My Tree

For half a year starting October 2009, Mitsubishi Chemical conducted activities to reduce the use of printing and copier paper at its head office building. Teams were formed by each division competing in the volume of paper reduced. Teams that achieved a 20% or greater reduction in cost could spend the reduction amount on social contribution activities or for introducing business efficiency improvement tools.

The activity led to a roughly 320,000-sheet reduction in the use of A4-sized paper and CO2 emissions were decreased by around 1,311 kg. Taking this opportunity, a contribution was made to My Tree, one of the programs of Green Tokyo Community Chest, which is aiming to revive Tokyo into a greenery-filled city. In May 2011, our company planted seven candleberry trees along Kaigan-dori in Shibaura, Tokyo.



Candleberry tree planted along Kaigan-dori in Shibaura

About Mitsubishi Chemical Corporation

As a core operational company of the Mitsubishi Chemical Holdings Group, Mitsubishi Chemical Corporation operates businesses in the areas of performance products, health care, and industrial materials under the Group philosophy "Good Chemistry for Tomorrow," with Sustainability, Health, and Comfort as the three decision criteria for our business activities for achieving *KAITEKI*.

Corporate data (as of March 31, 2011)

Mitsubishi Chemical Corporation

Establishment	June 1, 1950 (incorporated on October 1, 1994)
Head office	Mitsubishi Chemical Holdings Building, 4-14-1 Shiba, Minato-ku, Tokyo
President & CEO	Yoshimitsu Kobayashi
Paid-in capital	50,000 million yen
Line of business	Performance products/Healthcare/Industrial materials
Net sales	9,532 hundred million yen (non-consolidated)/ 20,196 hundred million yen (consolidated)
Number of employees	6,031 (non-consolidated)/ 27,828 (consolidated)
URL	http://www.m-kagaku.co.jp/index_en.htm 

● Mitsubishi Chemical Holdings Group



[▶ To the About Us page](#) 

Line of business/Main products



[▶ To the Businesses page](#)

Global network



Copyright (C) Mitsubishi Chemical Corporation All Rights Reserved.

Third-Party Opinion

▶ [Hideto Kawakita](#)

▶ [Sachiko Kishimoto](#)

Our response to the third-party opinions presented in last year's Report

Our responses to the opinions sent in by Mr. Hideto Kawakita and Ms. Junko Edahiro* to CSR Report 2010 are summarized below, as indicated in this year's CSR Report.

Outline of the matters pointed out in CSR Report 2010	Response by Mitsubishi Chemical
<p>(1) Concerning dialog with stakeholders, a clear indication needs to be made as to the means of establishing opportunities to continuously deepen dialog with important stakeholders, instead of through each event. (Mr. Kawakita)</p>	<p>We strived to clearly state the contents of conventional and new types of dialog with customers, business partners, employees, suppliers and other stakeholders to the greatest possible extent. We plan to study how to continuously deepen dialog to the required levels.</p>
<p>(2) Concerning communications with regional communities and society, policies, current situations, future measures and other matters need to be reported separately from social contribution activities. (Ms. Edahiro)</p>	<p>In last year's Report, we gave information on communication with regional communities and the public in the section for Social Contributions. It was pointed out that this gives the impression that we regard such communication as a form of social contribution. In response, in this year's Report we reported on this communication in addition to social contribution activities in the section for Corporate Citizen Activities. We will continue studying ways to communicate with the regional communities and society, which are among our most important stakeholders, while also taking into consideration the matters pointed out in item 1 above.</p>
<p>(3) In order to solve issues related to different stakeholders, the quality of PDCA needs to also be improved in areas other than RC Activities, and the outcomes should be reported (on the current situations of communications with business partners, and measures concerning overtime work hours and female employees). (Ms. Edahiro)</p>	<p>Concerning communications with our business partners, CSR briefings for business partners, which were newly held last year, were reported. The contents of the "Together with Employees" section of this year's Report have also been expanded, reporting on the status of overtime work hours, support for motivation and skill development of female employees, and various other measures implemented for employees.</p>

* Ms. Edahiro is an environmental journalist and translator. She is also the representative of e's Inc. and Japan for Sustainability (JFS).

Hideto Kawakita

CEO International Institute for Human, Organization and the Earth (IIHOE)

IIHOE is a non-profit organization (NPO) established in 1994 for pursuing democratic and harmonious development for all life on Earth. The major scope of activities involves support for management of citizens' groups and welfare workers, as well as support for CSR activities of major companies.

▶ <http://blog.canpan.info/iihoe/> (Japanese only) 



These opinions were written based on statements made on the website and interviews with human resources, general affairs and CSR personnel of Mitsubishi Chemical.

Among its CSR measures, reduction of environmental burden has progressed well based on PDCA (management cycle), and other broad-reaching matters have also begun to progress.

Points to be highly regarded

- As a member of the Mitsubishi Chemical Holdings Group, Mitsubishi Chemical Corporation (MCC) has begun actions by setting Sustainability (environment and resources), Health and Comfort (*KAITEK*) as **MOS indexes**, in order to make contributions to the sustainable development of people, society and the global environment visible. We hope the progress of actions for these indexes will be suitably disclosed.
- MCC has developed products and services that bring continuous new value to society, such as **MIMAMORI-gait** and **solution-processable OPVs**. We strongly hope that collaboration with NPOs and diverse other entities will progress in order for their effects to be more quickly disseminated.
- Concerning **improvement of the work environment for employees**, the ratio of users of maternity, child care and nursing care leave and shorter working hour systems among MCC employees has reached 2.94%. We strongly hope that similar measures will also be implemented among Group companies and that more information giving examples of users of nursing care leave and the shorter working hour system will be conveyed in-house.

Matters for which measures have progressed but further efforts are expected

- Concerning **energy conservation activities for cutting greenhouse gas emissions**, the energy conservation project at the petrochemical plant made steady progress, resulting in the reduction of 12,000 tons in CO₂ emissions. While this achievement is highly regarded, creative measures in production technologies should continue to be sought as a way to maximize the reduction effect of the planned facility renovation.
- **Progress in cultivation of safety culture** for revising and thoroughly implementing safety measures, prompted by the December 2007 fire at the Kashima Plant, is highly regarded. However, measures being implemented should be made visible and expanded, particularly with regard to the sharing of information and collaboration with partner companies in regular repair work.
- Concerning **waste reduction**, the reduction of generated volume and rise in recycling ratio are highly regarded. However, the ratio of sorted collection should be raised and efforts for research and development and technological partnership should progress in order to further raise the recycling ratio while especially seeking customers' understanding and sharing of responsibility.
- Concerning **the measures for approaching business partners**, the fact that briefings are being held for major suppliers and self-evaluation questionnaires are being distributed to 170 partner companies, which account for 90% of the purchasing, is highly appreciated. From here forward, evaluation should be conducted on the extent of achievement and for which matters, in order to promote sharing of understanding with suppliers on the issues revealed and for establishing an organization for promoting improvements; for realizing mid-term development of the platform for suppliers' environment, health, human rights and safety (EHS).
- Concerning **the improvement and utilization of diverse human resources for the entire Group**, a global human resources portfolio should be formulated beyond the framework of divisions and companies, looking to the future of the entire Group 10 years from now. A

- supervising officer (global human resources officer) should be appointed to promote the human resources measures at every opportunity, such as recruitment, nurturing employees and personnel exchange. At the same time, recruitment and training systems should be established for proactively utilizing diverse human resources, as a truly global corporate group.

Points for which further efforts are expected

- Concerning **dialog with stakeholders**, which MCC regards as the foundation for promoting CSR, we are deeply concerned that no clear indication has been made in the past few years on how occasions will be established for continuously deepening dialog with important stakeholders. Particularly with NPOs and the next generation of human resources, clear indication is needed on whether they are only to be supported or positioned as partners with which to hold dialog and orchestrate.

川北秀人

Sachiko Kishimoto
Executive Director, Center for Public Resources Development

▶ <http://www.public.or.jp/english/> 



MCC defines an ideal image of society as *KAITEKI* society. Its positioning of sustainability at the core of business administration by introducing **the Management of SUSTAINABILITY (MOS) axis** that measures value in terms of sustainability, in addition to the axes of Business Administration and Management of Technology (MOT), is highly regarded.

It is thought that the Great East Japan Earthquake and nuclear power plant accident will trigger significant changes in Japan's socioeconomic systems. MCC develops and supplies products and technologies for realizing sustainable society, such as **solution-processable OPVs**, plant-derived plastics (sustainable resources) and **MIMAMORI-gait**. In areas devastated by the earthquake and tsunami, issues of Japanese society have emerged sharply involving aging, depopulation, battered regional economies, community development and other matters. How should MCC face the changes the disaster brought for the social and business environment, and in what way can MCC contribute to society through business activities? We hope that the *KAITEKI* business administration MCC advocates will be deepened further.

Our opinions on MCC's specific CSR measures are indicated below, based on the information contained in your CSR Report 2011. MCC has used PDCA (management cycle) at work especially for environmental issues and, on the whole, your activities are held in high regard. Here, we would like to express opinions mainly concerning social issues.

*Management organization

Since MCC aims to attain an overseas sales ratio of 45% or more, the major issues for MCC's CSR management will be global risk management and consolidation of compliance organizations. MCC deserves high marks for conducting local seminars in Chinese and English for 389 management personnel of 38 Group companies in order to **promote compliance** . The scope and frequency of these seminars is expected to be widened even further.

*Business Continuity Plans (BCP)

MCC must have been pleased that all its plants were safely brought to a halt and that confirmation of the safety of employees and their families and recovery work were carried out smoothly amid the emergency situation caused by the huge earthquake and tsunami. We hope MCC will take this opportunity to again review the BCP, identify issues and establish even more solid organizations for handling

emergencies.

*Human rights protection measures

It is extremely important for the personnel strategy of a global company to respect human rights and utilize diverse human resources. Your Group's Compliance Code of Conduct mentions your respect for the dignity and rights of individuals, compliance with the international code of conduct, elimination of forced labor, and effective abolishment of child labor, and your determination to take practical action in these areas. This is held in high regard. Specific measures have commenced concerning the pursuit of work-life balance, promotion of women to higher positions, employment of people with disabilities, promotion to higher positions regardless of nationality, consideration of sexual minorities, and human rights education. Incorporating these viewpoints in your programs is believed to be necessary for developing personnel who can work globally. The issues of occupational health in workplaces (plants), irregular employment, and work-sharing also need to be checked from the viewpoint of human rights ("decent work").

Concerning supply chain management, MCC's purchasing policy states that you will adhere to laws and social norms, and [CSR briefings](#) and [questionnaires](#) are being given to business partners. We hold this point in high regard. We hope that MCC will announce specific measures to deal with and improve issues that have been revealed, to avoid unwittingly becoming party to human rights violations.

*Occupational safety

Though MCC has strengthened occupational safety measures, lost time to injury has remained high in recent years with regard to the target. MCC mentioned that one cause is the declining ability to deal with different situations at worksites, resulting from the decreasing number of experienced expert workers. This seems to be a tendency among the entire chemical industry, rather than an issue specific to MCC. We hope to see further improvement on this issue as well.

*Work-life balance

The introduction of the three systems of leave for accompanying a spouse's overseas assignment, temporary suspension of transfer and declaration of desired place of assignment marks significant progress in support for employees' maintaining a work-life balance. We hope the systems will be used effectively and actually utilized by many in the coming years.

*Living side by side with regional communities

We have been informed that studies are underway at MCC on specific corporate citizen activities to be pursued by the Mitsubishi Chemical Holdings Group. We would like to make the following three suggestions with regard to the current situation: (1) set themes for social contribution activities in areas closely related to *KAITEKI*, (2) continue to promote volunteer activities by employees, in collaboration with NPOs and non-governmental organizations (NGOs) and (3) conduct activities to help improve the environment in the local communities of overseas establishments, together with local employees and community residents. We also request that as a prerequisite and for ensuring safety and security for people of local communities, you publicize the environmental data and plans and results of monitoring of soil, groundwater, and other such items for each establishment.

岸本 幸子

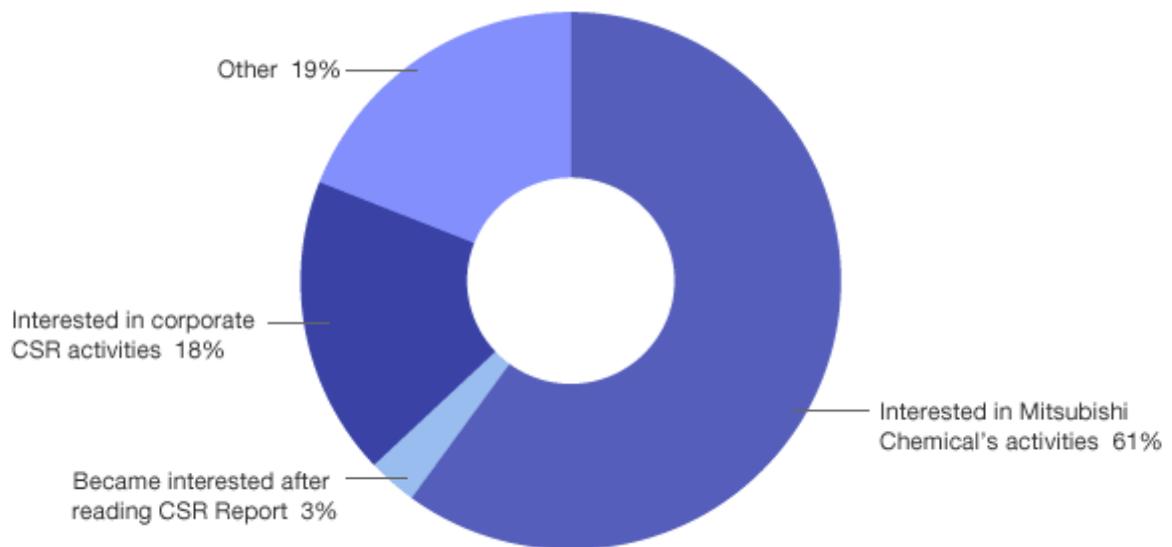
Opinions on CSR Report 2010

Thank you for your valuable opinions and comments on CSR Report 2010. We will refer to your feedback in our activities geared toward making *KAITEKI* a reality.

Below, please find the aggregated results of responses to the questionnaire.

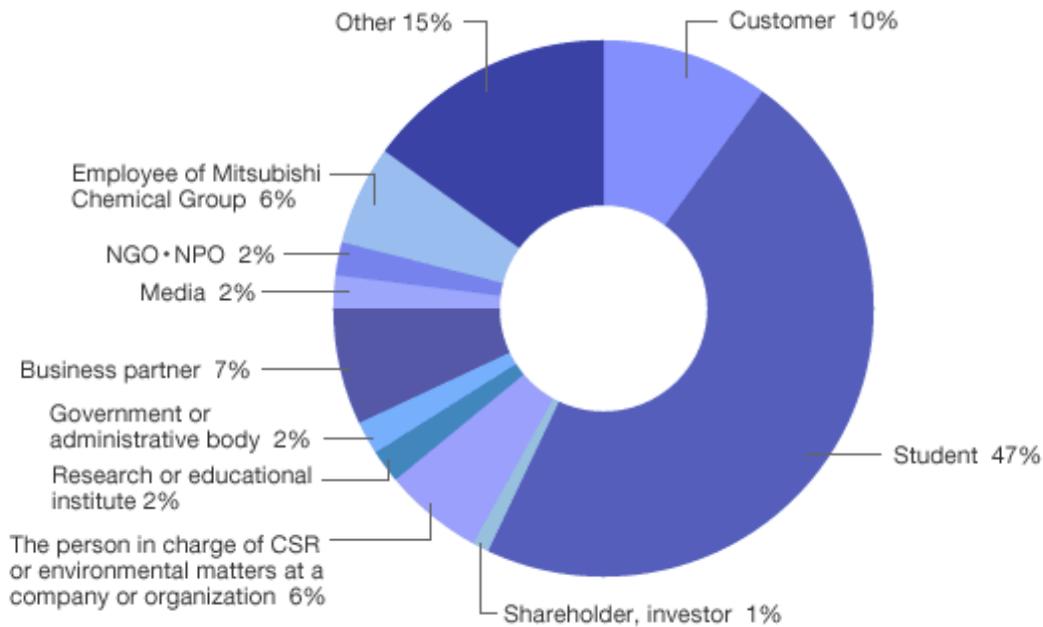
Aggregate results of questionnaire on CSR Report 2010

Q1: What was your reason for visiting the website?



*Figures were rounded off, so there may be some discrepancies

Q2: What is the position of the person responding to the questionnaire?



Opinions and comments on CSR Report 2010 (excerpts)

- It is nice that comments by people in charge were included and the questionnaire was attached for hearing opinions. But it was unfortunate that the contents of the website and booklet were the same. The data and status of measures being implemented should be disclosed more widely. Statements concerning business partners seemed especially insufficient. I look forward to future reports. (business partner, male, 50s)
- My relatives live close to a Mitsubishi Chemical plant, and this is another reason I hope safety and disaster prevention measures are thoroughly implemented. It would be better if the efforts and countermeasures each plant is implementing were made more open. (other, male, 20s)
- I understand and appreciate that Mitsubishi Chemical has actively promoted measures to prevent global warming. At the same time, I feel that more improvements could be made regarding transportation. (customer, female, 30s)
- I still vividly remember the ethylene plant fire that broke out at the Kashima Plant in 2008. In order to prevent these accidents, it is important that the leaders at worksites are always present during construction work and periodical maintenance so they can get a handle on the situation, instead of leaving everything to outsourced parties or cooperating companies. (other, male, 50s)
- I'm now aware it is necessary to value and share the ideas of all employees in the company's efforts to develop and supply unique products. (employee, female, 40s)
- This makes me wonder if it is appropriate that the environmental data fabrication incident that took place in 2009 at the Yokkaichi Plant is not mentioned on the top page of the Mitsubishi Chemical website, even though it is posted on the plant's website. (other, male, 50s)
- My hip joints do not function normally, so I use a double cane when walking. I was searching for a safe tricycle that lets me drive through town in a stylish and cool way, and found an article on the electric power-assisted tricycle proposed by Mitsubishi Chemical. It is exactly the kind of tricycle I was looking for, combining the benefits of an automobile and a bicycle. The design is also neat, and I wish good luck to the team working for its practical application. (other, female, 30s)