



# CSR Report 2009

Corporate Social Responsibility Report



Responsible Care

mitsubishi-chemical.com  
MITSUBISHI CHEMICAL CORPORATION

## Mitsubishi Chemical Group Vision

# ka<sup>ee</sup>aku shapes the future

## Good "Chemistry" for Tomorrow

### Our Principles

- We will continue to be a preferred solution partner to our customers by constantly advancing our skills and technologies.
- We will continually change and innovate, creating value and contributing to sustainable growth throughout the world.
- We will fulfill our social responsibilities including our commitment to health and safety, and harmony with the environment.
- Our corporate culture of openness, fairness and mutual respect enables us to actively pursue and realize our dreams.

The Japanese word **ka<sup>ee</sup>aku** means 'chemistry' as well as 'science'. In addition, it also refers to the Mitsubishi Chemical Group and each person who works for the Group. The capital 'G' is used to emphasize the Group's overall strength.

### Mitsubishi Chemical Holdings Corporation Group Philosophy

# Good **Chemistry** for Tomorrow

Creating better relationships among people, society, and our planet.

#### Mitsubishi Chemical Holdings Corporation

As a holding company, MCHC performs portfolio management functions. MCHC deploys resources with the aim of promoting Group growth and progress, and actively advances other measures to enhance corporate value.



#### Mitsubishi Chemical Corporation

As the core company of the Mitsubishi Chemical Holdings Corporation (MCHC) Group, we provide solutions in forms as varied as the unlimited possibilities of chemistry to a broad array of industries and society. Our goals in doing so are to help solve global environmental, energy, and resource problems, and promote safety and security in daily life.

#### Mitsubishi Plastics, Inc.

As a "development-oriented" company that swiftly gives shape to the value markets demand, we endeavor to work seamlessly with other MCHC Group companies to develop high-performance, high-value-added products. Together with our customers, we are helping to build a prosperous, comfortable society in tune with the environment.

#### Mitsubishi Tanabe Pharma Corporation

Our vision is to become a global research-driven pharmaceutical company that is trusted by communities. Creating new business domains and business models throughout the Group, we contribute to the healthier lives of people around the world and fulfill our responsibilities as a company engaged in life science.

<sup>1</sup> In April 2008, Mitsubishi Plastics was re-launched as an entity integrating the former Mitsubishi Plastics, Mitsubishi Polyester Film, Mitsubishi Chemical Functional Products, Mitsubishi Chemical MKV, and the functional products businesses of Mitsubishi Chemical.

## Editorial Policy

Mitsubishi Chemical Corporation (MCC) began issuing annual Responsible Care (RC) reports in fiscal 1998 to discuss its RC activities for improving environmental, safety, and health conditions throughout the chemical product life cycle. In fiscal 2008, we began issuing a CSR Report as stakeholder concern regarding corporate social responsibility (CSR) has been ever increasing. The CSR Report was created from the development of Responsible Care (RC) Report content and a wide-ranging perspective of business activities from both economic and social viewpoints. The fiscal 2008 initiatives introduced in this report are organized into the Special Feature, Action Report, Management Report and Reference sections.

### •Special Feature

The theme of the Special Feature is safety and the environment. The safety-themed section introduces MCC Group initiatives aiming to cultivate a safety culture after the December 2007 Kashima plant fire. The environment-themed section introduces MCC group products and technologies that contribute to a sustainable society, including a product close up article on the three-wheel bicycle with electric assist motor project proposed and realized by our employees.

### •Action Report

This section highlights activities and achievements from the viewpoint of MCC's focus on safety, the environment and society, including new initiatives launched in fiscal 2008. Furthermore, starting this fiscal year, we include employee and external stakeholder's comments related to these activities.

### •Management Report and Reference

This section introduces the MCC management structure for compliance, risk and other functions, and includes main performance data.

## Reporting Period

Fiscal 2008 (April 2008 – March 2009)

**Note:** Some content refers to fiscal 2009 developments.

## Report Scope

The scope of this report encompasses MCC and MCC Group companies in Japan and abroad. RC activity performance data, however, has been compiled and disclosed only for MCC (Including MCC production sites and Group companies within those sites) and, among those companies advancing MCC Group RC, the 19 Companies Act subsidiaries located in Japan (Refer to P43).

## Guidelines Referenced

- Ministry of the Environment "Environmental Reporting Guidelines (Fiscal Year 2007 Version)"
- Global Reporting Initiative (GRI) "Sustainability Reporting Guidelines (3rd Edition)"
- Ministry of the Environment "Environmental Accounting Guidelines 2005"

## Inquiries

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The content of this report is also available at:  
[http://www.m-kagaku.co.jp/index\\_en.htm](http://www.m-kagaku.co.jp/index_en.htm)

## Disclaimer

This report includes not only facts regarding the past and present status of the MCC Group, but also forecasts regarding conditions in society, and discussions of business plans and directions and forecasts of their results. These forecasts are hypotheses or judgments based on information available at the time this report was written. Changes in various factors may cause future conditions in society or the results of business activities to differ from forecasts.

## About Responsible Care

Voluntary actions that companies handling chemical substances take to improve the environment, safety and health in every stage of the product life cycle, beginning with the development of chemical products and continuing through their production, distribution, use and final disposal. Companies pursuing RC activities report the results of their efforts and engage in a dialog with society regarding them. The concept, which was first introduced in Canada in 1985 and has since spread to 53 countries (as of August 31, 2009), also encompasses a commitment to inform the public about the outcomes of activities through dialog and communication. In Japan, the Japan Responsible Care Council (JRCC) coordinates the activities of 100 (as of August 31, 2009) member companies.

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## Grounded in Total Workplace Safety, We Will Create a Sustainable Society through “Good Chemistry”



### Overcoming the Economic Crisis

In the fiscal year ended March 2009 (fiscal 2008), business conditions remained harsh due to large-scale contraction in the global economy triggered by the financial crisis in the U.S.

Mitsubishi Chemical Corporation (MCC), a core business company of the Mitsubishi Chemical Holdings Corporation (MCHC) Group, has seen an unprecedented deterioration in its revenues and earnings reflecting the sudden and dramatic drop in domestic and overseas demand, coupled with violent fluctuations in raw material and fuel prices.

In June 2009, MCHC revised the basic strategies of *APTSIS 10*, the Group's current mid-term management plan. Initially launched in fiscal 2008, the plan now places greater emphasis on responding rapidly to severe economic contraction by accelerating the pace of structural reform, innovation, and leaping forward.

Under the revised strategies, the MCC Group will work in unison to improve its performance by selectively allocating management resources to business and R&D projects that meet the Group's decision criteria of “Sustainability,” “Health,” and “Comfort.” At the same time, we will accelerate structural reform initiatives that encompass business rationalization and withdrawal.

### Securing Total Safety

Safety is essential in every facet of our business activities as a manufacturer operating in the chemical industry.

To date, the MCC Group has implemented a variety of measures to ensure the safety of its operations. Despite these endeavors, a fire at the Kashima Plant's ethylene production facility in December 2007 claimed the lives of four individuals.

Reflecting seriously on the gravity of this incident, we have redoubled our efforts to thoroughly strengthen safety precautions and our safety management systems.

In addition to these endeavors, we are proactively promoting measures that cultivate the human resources necessary to realize total onsite safety and fostering a safety culture such as bolstering our frontline production capabilities and building an organization and structure to ensure effective safety management systems.

Looking ahead, we will commit the incident to memory and work diligently to ensure total safety in the MCC Group.

## Striving to Prevent Global Warming

Environmental awareness is essential to any company as a going concern.

Identifying greenhouse gas reduction as one of its core management strategies, the MCHC Group is striving to realize a “KAITEKI (‘comfort’ in Japanese)” world — in which people can enjoy comfort, affluence, safety and security — underpinned by a sustainable society.

As a major producer of the MCHC Group’s overall CO<sub>2</sub> emissions, we play a critical role in achieving CO<sub>2</sub> reduction targets. In this context, our focus is on bringing to market environmentally conscious products and technologies, as well as raising production efficiency at our plants, and conserving energy. Moreover, we will strive to develop more effective and relevant environmental measures while deepening our dialogue with local communities and customers.

In specific terms, we will make concerted efforts to ensure the early commercialization of next-generation growth businesses based on cutting-edge technologies that contribute to energy conservation and the reduction of greenhouse gas emissions. These efforts are being applied in such products fields as white LEDs, Li-ion battery materials for hybrid electric vehicles, chemical components for lighter weight automobiles, sustainable resources, organic photosemiconductors, and organic photovoltaic modules.

As a chemical company that has continued to challenge new boundaries in the development of wide-ranging technologies while handling carbon products, the MCC Group is convinced that environmental issues may be resolved dramatically by leveraging the wisdom of chemistry. In this context, we are endeavoring to create a neo carbon society that makes full use of carbon and its vast potential.

### MCHC Group Motto

# 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

## United in the Early Implementation of Business Structural Reform

A total commitment to the early implementation of business structural reform measures is essential to overcoming the current unprecedented crisis and securing sustainable growth in a new post economic recovery world.

Recognizing the need and critical importance of a common compass that binds together management and employees, I have taken every opportunity to promote APTSIS, the MCHC Group motto.

With each and every employee pursuing the purpose and purport of APTSIS, I strongly believe that we will swiftly realize business structural reform and shift to high value-added businesses that lead to sustainable growth.

Working to implement these various measures, I will devote my energies particularly toward efforts that are consistent with our commitment to safety and compliance by further enhancing mutual communication with employees.

I will also do my utmost to secure full employment conducive to reinforcing relationships of mutual trust with society and all MCC Group members.

## Toward the Realization of Our Group Philosophy

The Group philosophy “Good Chemistry for Tomorrow” calls for the creation of a better tomorrow through products and technologies. We consider putting this philosophy into practice as one of MCC’s corporate social responsibilities.

Guided by this philosophy, the MCC Group will forge deeper ties with all stakeholders and fulfill its corporate social responsibility while adhering to the 10 principles of the UN Global Compact.

In closing, I humbly request that readers cast an eye over this CSR Report and provide us with their honest thoughts and opinions with regard to the MCC Group’s CSR initiatives.

September 2009



**Yoshimitsu Kobayashi**

Representative Director, Member of the Board  
President and Chief Executive Officer  
Mitsubishi Chemical Corporation

# Bringing Forth a Wide Array of Technologies and Products That Support Daily Life and Industry throughout the World

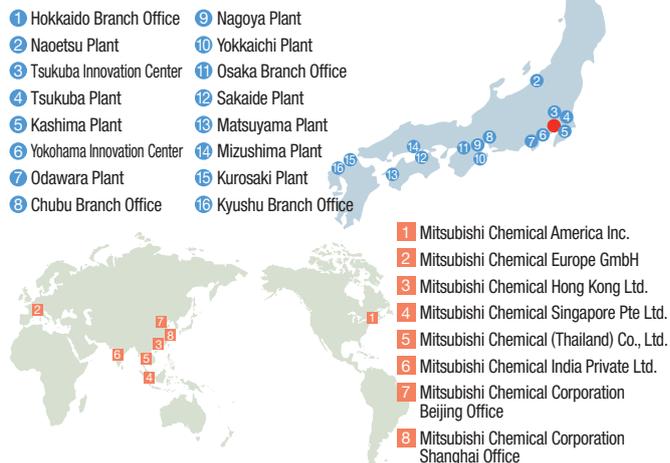
To solve global environmental, food, and energy crises, and create safety and comfort for daily life—the Mitsubishi Chemical Corporation (MCC) Group is committed to the idea that chemistry can play a major role in solving these problems and creating new value. Working from a foundation of technologies built up over the years, the MCC Group is offering the unlimited possibilities of chemistry as solutions to a broad range of industries and society.

As a member of the Mitsubishi Chemical Holdings Corporation (MCHC) Group, MCC began in fiscal 2008 to implement its *APTSIS 10* mid-term management plan, which calls for the offering of more high-performance, high-value-added products, a faster business “metabolism,” and the development of next-generation businesses.

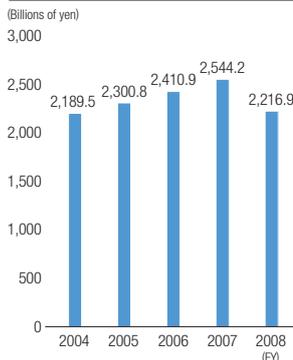
## Company Overview (As of March 31, 2009)

Company name: Mitsubishi Chemical Corporation  
 Head office: Mitsubishi Chemical Holdings Building  
 14-1 Shiba 4-chome Minato-ku,  
 Tokyo 108-0014, Japan  
 PHONE. +81-3-6414-3000  
 FAX. +81-3-6414-3671  
 Incorporation: October 1, 1994 (Established June 1, 1950)  
 Paid-in capital: ¥50 billion  
 Net sales: ¥1,011.7 billion (Non-consolidated)  
 ¥2,216.9 billion (Consolidated)  
 Employees: 5,945 (Non-consolidated)  
 25,705 (Consolidated)  
 Group companies: 162

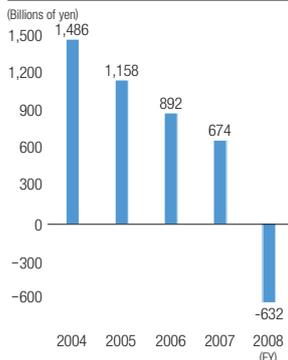
## Domestic and Overseas Offices/Plants



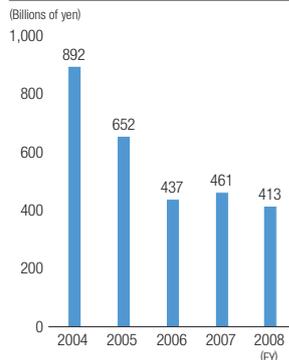
### Net Sales



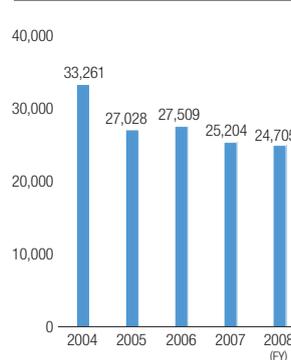
### Operating Income



### R&D Expenditures



### Number of Employees



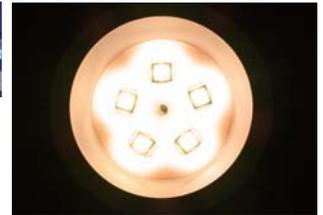
## Performance Products

### Electronics Applications

The MCC Group's core technologies are the culmination of years of expertise in fields involving chemistry of light and color. We combine these strengths with material design, processing and device creation technologies to drive ongoing technical innovation in the field of electronics.



Optical recording media and portable HDD



LED

### Designed Materials

Drawing from the MCC Group's base in technologies such as synthesis, material design, process design and mold processing, this segment contributes to myriad industries that precisely meet needs that vary distinctly by customer.



Li-ion battery materials



Sugar ester

## Health Care

### Health Care

Applying its own wide array of technologies, the MCC Group is pursuing health care businesses in a broad range of fields, like clinical examination, diagnosis, drug discovery support, and safety evaluation. In recent years, attention has been focused especially on personalized medicine, in which individuals receive medical care tailored to their own particular physical condition. The Group's aim in this business area is to improve quality of life.



Allergy test kit



Active pharmaceutical ingredients and intermediates

## Chemicals

### Chemicals

With years of experience in core technologies like carbon chemistry, catalyst design, synthesis, process design, and plant operation, the MCC Group offers numerous unique products and technologies for the electronics, automobile, and other growth markets, and for clothing, food, housing, and other markets serving essential daily needs.



Carbon-related products



Application: High-performance textile products

### Polymers

Using its strengths in polymer design, processing, and composite technology to achieve new heights in high-performance and high-value-added products, the MCC Group supports a wide range of industries with its polymer solutions. Also, we contribute to the promotion of a recycling-based society through the development of new materials such as bio-based polymers based on sustainable resources.



Application: Food containers



Application: Transfusion bags

# Creating a Safety Culture Awareness and Behavior

## MCC Group Initiatives After the Fire at Mitsubishi Chemical Corporation's Kashima Plant

Reflecting on the fire that broke out at the Kashima Plant in December 2007, the Mitsubishi Chemical Corporation (MCC) formulated a basic policy for fiscal 2008 RC activities under the theme of reemphasizing Safety First Awareness, with all Group companies proactively engaged in recurrence prevention. In addition, committees have been established at the Kashima Plant, where five measures to cultivate a safety culture have been established.

### Progress Report

#### Measures to Prevent Recurrence

Since December 21, 2007, when the fire broke out at the No. 2 ethylene facility of Mitsubishi Chemical Corporation (MCC)'s Kashima Plant, MCC has undertaken a companywide effort to investigate the cause of the accident. To prevent recurrence, under the guidance of the Mitsubishi Chemical Corporation Kashima Plant Accident Investigation Committee, established by Ibaraki Prefecture and related agencies, we have installed safety equipment, enhanced our safety management systems and implemented measures to prevent recurrence.

On April 21, 2009, the sixth meeting of the accident investigation committee was convened. This was the final meeting of the committee, which confirmed MCC's implementation of recurrence prevention measures and measures to cultivate a safety culture.

#### Cultivating a Safety Culture

In response to the indication by the Accident Investigation Committee that "MCC must resolve the problems and issues inherent in its staff and organization, which are considered to be among the causes that prevented a culture and climate focused on safety from thoroughly penetrating every aspect of its operations at the Kashima Plant, which is also considered to be the background of this accident," MCC, with the cooperation of a third

party (Mitsubishi Research Institute, Inc.), identified and analyzed the problems and issues inherent in its staff and organization. As a result, we confirmed that, among such other problems and issues as excessive on-site supervisor duties, a gap existed between our organizational safety awareness and the fact that our rules regarding safety and security were complex and enormous, making their practical application difficult. In light of these discoveries, we formulated a policy for the way we should be—a plant that places the highest priority on safety—and measures centered on initiatives that will realize our goal of cultivating a safety culture.

Furthermore, renewing our commitment to never forget this accident as well as prevent future incidents, we established February 21st as Safety Day and conduct safety-related events. In fiscal 2008, Safety Day included a safety message from the president and admonitory lectures from plant managers.



Kashima Plant initiatives

### From Mitsubishi Research Institute, Inc.

**Safety is an issue of both science and corporate culture. It is important that it is rooted in systematic and continual efforts**

The inadequate communication resulting from an unbalanced personnel structure due to recession-related attrition in the industry, and the awareness gap between veterans experienced with plant start-up and current on-site workers are common problems throughout the petrochemical industry.

The direct cause of the fire at the Kashima Plant was attributed to the placement of an upstream pneumatic valve, an inadequate operation manual and other design and operational problems, but these are indicative of the gaps in awareness and communications issues mentioned above, which are organizational factors.

As safety is an issue of both science and corporate culture, it is important that safety awareness is rooted in systematic and continual efforts that lead to the improvement of Mitsubishi Chemical's corporate value.



**Shunsuke Furuya**  
Lead Investigator  
Social Safety Management Group  
Science and Safety Policy  
Research Division  
Mitsubishi Research Institute, Inc.



## Kashima Plant Initiatives

### Establishment of Five Committees

To realize the way we should be, we formulated five priority measures for the Kashima Plant. To ensure these measures are faithfully implemented, one committee was established to oversee implementation of each measure. In addition, the Safety Culture Promotion Meeting, chaired

by the plant manager, will be held each month to discuss and manage the overall progress of the activities overseen by each committee. These committees and meetings are managed by the Safety Culture Promotion Office, which was established after the accident.

### Safety Culture Cultivation Measures

#### The Way We Should Be

- (1) Achieve a balance among role, responsibility and assessment
- (2) Appropriately review business practices
- (3) Maintain a realistic and practical rule system
- (4) Cultivate personnel with heightened sense of safety
- (5) Establish a dialog with related parties, including partner companies

#### Five Priority Measures

- 1 Personnel Development Personnel Development Committee
- 2 Working Style Reform Working Style Reform Committee
- 3 Rules Reform Rules Reform Committee
- 4 Enhanced Safety Capabilities Enhanced Safety Capabilities Committee
- 5 Enhanced Plant Management Capabilities Enhanced Plant Management Capabilities Committee

#### Committee Activities

In an attempt to improve independence through the proper division of duties, we provide experiential opportunities based on our training programs. Also, we develop our human resources at each level through improved personnel evaluations that stress the initiative process and other measures.

By improving the workload overflow we created time that was allocated to provide more time for safety activities, training and education.

We improved bloated and complex rules, making the rules and the system easier to understand and use. Also, by reflecting the ideas and opinions of on-site workers, we will create a reform process based on mutual consent.

Putting into practice the improvement cycle of "notice, tell, change and confirm" with regard to unsafe places and activities, we are cultivating a high sense of safety in our employees and creating an atmosphere where coworkers can talk together and with supervisors about issues regarding defects.

We are training employees to prevent facility problems through the cultivation of sensitivity to signs of abnormality and improving awareness of the importance of maintaining and sharing data.

### From a Committee Participant

We are engaged in the promotion of a PDCA cycle for reform to "notice, tell, change and confirm"

The Enhanced Safety Capabilities Committee provides opportunities and systems to discover potential accident failures from tense and frightening moments at work, construction, operation and facilities and to go through a PDCA cycle to Notice, Tell, Change and Confirm. We are also involved in activities to raise the reform and awareness capabilities among all our employees through various recognition systems, presentations and enhanced know-why collection. By implementing reforms, if we can feel that we have heightened work safety, everyone will agree and voluntarily undertake reforms and be able to work with a sense of satisfaction and meaning. I want to contribute as much as I can to creating this kind of workplace climate.



**Masayuki Watanabe**  
Leader  
Enhanced Safety  
Capabilities Committee

## Participation in RC Regional Dialogue

MCC proactively participates in RC Regional Dialog, an event featuring discussions with regional communities on safety and the environment organized by the Japan Responsible Care Council.

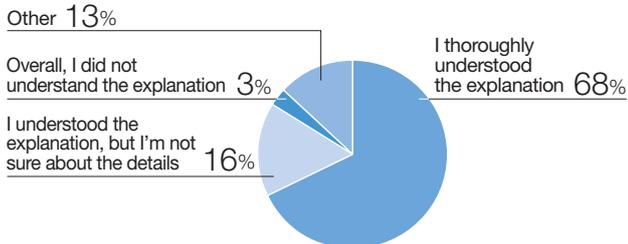
At the RC Regional Dialog held in 2009, the Kashima Plant presented its current countermeasures and long-term initiatives under the title of Aiming to Create a Safe Plant and the Prevention of a Recurrence of the Fire Accident at the No. 2 ethylene facility of MCC to 135 attendees, comprising residents, local authorities and NPO groups.



Kashima Area RC Regional Dialogue

Also, the procedures to minimize damage from future accidents and a communication system to inform local residents were confirmed.

## Results of the Responsible Care Kashima Area Regional Dialog Survey



- I thoroughly understood Mitsubishi Chemical's explanation. (Residents' association/citizen's group)
- Mitsubishi Chemical's announcement incorporating animation was easy to understand. (non-JRCC member)
- I think they did their best to explain countermeasures and responses, but I felt it was too much detail. I would have preferred them to be more direct and to the point. (JRCC Kashima area member)

## Various Initiatives Toward the Cultivation of a Safety Culture

### Safety Vow Pagoda Established in the Kashima Plant

On December 10, 2008, we established a Safety Vow Pagoda at the Kashima Plant to represent our eternal vow that there will be no more accidents. The base expresses the full power that operates at the Kashima Plant, while the four palms representing employees, partner companies, families and local citizens support the orb, which represents irreplaceable life and a heart that desires safety. The four vertical lines represent an observant heart, communicative feelings, a protective spirit and the bond of friendship, all of which are needed to ensure safety.



Safety Oath Pagoda

### Joint Emergency Drills with Partner Companies

To enhance the dialog with related parties and partner companies as established in The Way We Should Be, we listen to our partner companies' staff, reflecting their ideas in our initiatives and regularly conduct joint emergency drills where we can confirm our understanding and procedures with each other.



November 2008: 1,378 participants



March 2008: 985 participants

## From a Director on Administrative Communication Committee of the City of Kamisu, Ibaraki Prefecture

I want the image of production facilities to change in the eyes of local citizens through a continued attitude of safety as proposed to the citizens

Although the production of new chemical substances is necessary for our modern society, we cannot deny that we have considered the facilities a symbol of potential danger from explosions and poison gas leaks since the accident. In February 2009, I attended my first meeting of the Japan Responsible Care Council's Kashima Region Dialog as a city council committee member, and listened to the report on the progress, causes and countermeasures related to the fire that broke out at the end of 2007. The report, which was produced from the perspective of the average citizen, greatly exceeded my expectations, and I fully understood Mitsubishi Chemical Corporation's sincere attitude in striving to prevent any recurrences. Through this dialog between regional communities and corporations, I felt confident that the image of chemical substance production had changed for the better in the eyes of the citizens.



**Shouichi Sato**  
Director, Liaison Council Kamisu  
City Council Member (City Council) Doai Eastern District,  
District Chief



## MCC Group Initiatives

### Reemphasizing Safety-First Efforts in Facilities and Management

At each MCC plant, in accordance with reemphasizing efforts to make safety first, the basic policy for RC activities in all Group companies in fiscal 2008 we implemented four safety measures aimed at preventing recurrence: (1) facility safety measures, (2) safety management measures, (3) fire safety measures and (4) safety measures to prevent the spread of damage. While considering the special characteristics and differences among products manufactured at each plant, we concentrated on effective safety measures for facilities and the formulation of valid criteria for management and audited the status of implementation. We requested corrections of the safety measures that the fiscal 2008 RC audit indicated to be insufficient, and confirmed thorough efforts to implement safety measures in the areas of facilities and management.

### Group RC Conferences in China and the United States

The MCC Group began holding Overseas RC Conferences, aimed at promoting RC activities, together with overseas Group companies in fiscal 2004. Group companies from the region where the conferences take place are in attendance to report on examples and results of RC activities, provide solutions to issues through the exchange of ideas and information in an effort to enhance the level of RC activities at each company.

In fiscal 2008, one conference was held in July in Beijing and another was held in October in the US, and in addition to the yearly reporting and exchange of information, we request the thorough implementation of Safety First in light of the Kashima Plant fire and other domestic accidents.

## MCHC Group Initiatives

### Three Company Conference Established to Exchange Ideas Centered on Safety

Mitsubishi Chemical Holdings Corporation (MCHC) has established the Group Foundation Enhancement Office to foster cross-group ties in such areas as production technologies, the environment and safety. In addition, MCHC holds the Three-Company Cooperation Council as necessary, attended by general managers in charge of these functions at Mitsubishi Chemical, Mitsubishi Plastics and Mitsubishi Tanabe Pharma. The objective of this council is to create a common awareness of

environmental and safety activities throughout the MCHC Group and to serve as a platform for sharing information and opinions on the companies' policies and issues in this regard. At the Three-Company Cooperation Council held in March 2009, MCC provided an update on initiatives to cultivate a safety culture in response to the Kashima Plant fire, explained the thorough Safety First RC action policies continued throughout the group in fiscal 2009, and exchanged various ideas.

## From the Person in Charge of Safety in the Asian Region

### My first Asian RC Conference was a very meaningful two days

About 30 Group companies from the Asian region attended the Asian RC Conference in Beijing. As a first time attendee, it had a big impact on me, and was actually a very meaningful two days.

First of all, during the explanation covering MCC Group RC activity policies and accident reports, I became self-conscious of my responsibility as a Group employee. Specifically, I had a keen awareness that my company's carelessness affects the entire Group. Also, during the introduction of the hardships and characteristic features of companies in the Asian region, I found much that I could take away and quickly implement at my own company. For me, the best part of the conference was being able to meet people in person. The opportunity to have a face-to-face discussion with others about the difficulties of activity promotion and other issues in each country contributed significantly to the creation of human relationships integrally connected to the promotion and review of RC activities.



**Tetsuya Yoneda**  
General Accounting  
GEMtek Corporation

# Toward the Realization of a Sustainable Global Environment

Mitsubishi Chemical Corporation (MCC) Group Technologies and Products that Contribute to *KAITEKI*

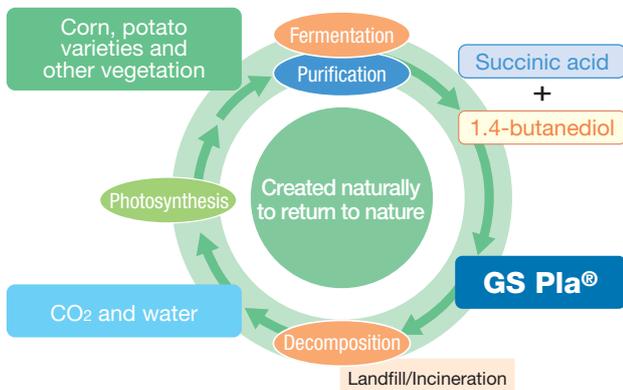
Having established “Sustainability,” “Health,” and “Comfort” as the decision criteria for corporate activities, the Mitsubishi Chemical Holdings Corporation (MCHC) Group focuses effort on developing various technologies and products to realize *KAITEKI*.

## Use of Sustainable Resources

### Development of Proprietary Bio-based Polymers

Plastics are indispensable to industry and our daily lives. However, in recent years there has been increased concern over the depletion of fossil resources, the raw materials used to make plastic, and the environmental impact of waste products.

Viewing the conversion of plastic raw materials to sustainable resources and improved biodegradability to be the mission of chemical companies, MCC develops proprietary bio-based polymers through the combination of biotechnology and advanced catalyst and polymer technology. One example is Green Sustainable Plastic (GS Pla®), a biodegradable plastic that is broken down into water and carbon dioxide by subterranean and other microbes. Possessing superior safety and molding characteristics, it is being used for agricultural materials.

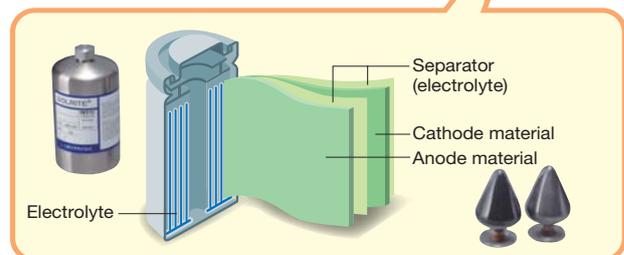
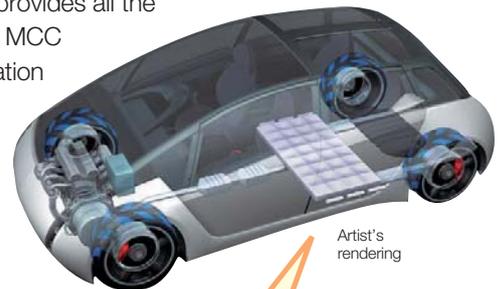


## Toward the Dissemination of Hybrid Electric Vehicles

### Development of Li-ion Battery Materials

The adoption of eco-cars is the driving force behind the prevention of global warming. Hybrid electric vehicles represent the forefront of this movement. They require the practical application of a large-capacity Li-ion battery (LiB) in order to travel long distances on a single charge.

The proprietary technologies for material design, chemical reaction control, and battery evaluation are now being applied by the MCC Group to develop electrolytes, cathodes, anodes, and separators for the LiB. As the only manufacturer that provides all the main components, MCC supports the realization of extremely safe, durable, high-power and long-life LiBs for vehicles.



## Working with a 20- to 50-year Perspective to Address the Most Difficult Challenges Confronting Humankind The *KAITEKI* Institute Established

Amid mounting concern about global issues, Mitsubishi Chemical Holdings Corporation (MCHC) established the *KAITEKI* Institute, Inc., a global research institute focused on meeting energy, resource depletion, climate change, water and food crises and healthcare challenges on April 1, 2009.

The Institute has two basic functions. One is a think tank that compiles and evaluates trends and information that relate to 2030 and beyond in the context of both natural and social science, and creates a forum for discussion of what should be researched now based on information and projections about the future. The other is to promote

research in this area by engaging the best minds in the world while partnering with research organizations worldwide, and collaborating with them through contract research and joint research. In addition, experts outside the Institute, from various areas, are invited to give us advice on the Institute's direction to promote objectivity from a specialist's perspective.

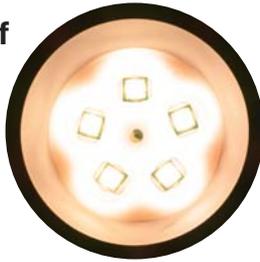
By fusing these functions, the Institute proposes conceives for enterprises that pioneer new business areas based on the result of projections and research regarding the earth's future to the MCHC Group. The Institute will contribute to society through the MCHC Group businesses.



**A Quest for Lighting That is Comfortable for Humans and the Environment**

**Development and Supply of LED Materials**

LEDs<sup>1</sup> change electric energy directly into light energy. LED lighting consumes less electricity and lasts longer than fluorescent lamps and incandescent bulbs, which are linked to energy and resource conservation. We expect LED lighting to be widely adopted in the near future. MCC succeeded in mass producing phosphors for high-intensity white LEDs and gallium nitride substrates which are effective to realize more natural white light, contributing to expanded white LED usage. Through the development and supply of LED materials, we are contributing to the advancement of next generation lighting that respects both humans and the environment.



<sup>1</sup> LED stands for "Light Emitting Diode." An LED is a semiconductor diode that emits light when voltage is applied.

**Protection of Food Safety**

**Providing Safe and Reliable Food Products Food Sanitation and Hygiene Analysis Service**

Providing safe and reliable food products essential to society is one role of chemistry. Making use of its basic analytical technologies and various networks, in 1992 the MCC Group was the first in its industry to start a food sanitation and hygiene analysis service. Since then, as early implementers of the Hazard Analysis and Critical Control Point (HACCP) concept, we conduct microbiological inspection to check for the presence of pathogenic microbes in food products and physicochemical inspections to analyze the nutritional content of various food products to respond to the dietary needs of consumers and society.



**Clean Water for the People of the World**

**Providing Ion Exchange Resin and Activated Charcoal**

There are still many regions in the world where there are concerns over the availability of safe, clean drinking water. As an answer to these concerns, the MCC Group manufactures and sells ion exchange resins and activated charcoal to be used for high-purity water production equipment based on advanced technology cultivated over many years. These products are also used in a wide range of environmentally-related areas, including effluent treatment and air and exhaust purification.



**Defining the MCHC Group Goal of KAITEKI**

The MCHC Group believes life in the 21st century will require more than simply pursuing an improved quality of life, given the problems presented by climate change, resource depletion, water and food crises and health issues. To resolve the problems threatening the Earth and humankind, we must combine the wisdom, technology

and ideas of the people of the world to create innovative new technologies and materials necessitated by good chemistry that are not in conflict with sustainability. The MCHC Group refers to sustainability, abundance, and comfort created by the realization of these new technologies and materials as *KAITEKI*.

## Close Up

Riding on a Dream of Cutting-Edge Chemical Technology:  
Three-Wheel Bicycles Equipped with an Electric Assist Motor

## The *KAITEKI* Takes Off Toward the Future

At the end of March 2009, The *KAITEKI*, a three-wheeled bicycle equipped with an assist motor, made its first appearance.

The *KAITEKI* prototype project, which incorporates cutting-edge chemical technologies such as carbon fiber for the body, photovoltaic modules and Lithium-ion secondary battery for the driving power supply and LED lights, began as an idea and a dream by employees who envisioned the development of electric assist based on the latest chemical technology with the mobility and convenience of both an automobile and bicycle.

### Creating the Bicycle of the Future

In the fall of 2007, we conducted a training seminar for mid-career employees working in MCC's Performance Products Division under the theme "thinking about the future of business." The idea of an electric bicycle incorporating the convenience of both an automobile and bicycle using the latest chemical technology was first proposed at this training session. Aiming to achieve sustainability consistent with comfort and affluence that is *KAITEKI*, the MCC Group possesses various advanced materials, products and technologies such as photovoltaic modules and Li-ion battery materials to make efficient use of an inexhaustible energy supply, low power consuming and long-life LED, carbon fiber composites, reinforced plastic that is stronger than steel, and light and strong engineering plastics to substitute for glass. They thought they could combine all these elements together to create a bicycle equipped with an electric assist that can be used to move both people and baggage, contributing to the realization of *KAITEKI*.

### Affirming the Possibility of Bicycles

Executive officers acting as inspectors initially thought that the idea needed more development and that market research would be required. The employees who proposed the idea were anxious to make it a reality, so they took it upon themselves to conduct a bicycle user study. As a result of consultation with the Japan Bicycle Promotion Institute, they learned that 40% of urban residents who drove cars typically traveled less than 5km to their destinations. Furthermore, in Europe, where environmental consciousness is very high, many people used bicycles to commute or get to where they need to go. They also confirmed that the European velotaxi (bicycle taxi) had been introduced in Japan. Affirming the possibility of bicycles, the employees presented their data at the final meeting at the end of March 2008, where they proposed the idea for a three-wheeled bicycle equipped with an electric assist motor and roof that would be easy for seniors to use, could be ridden in the rain and carry large baggage. Eventually, executive officers approved the proposal and granted a one-year period for the prototype project that the corporate division members were involved in.



The project members who proposed The *KAITEKI*,  
Mr. Tsuyuki, Managing Executive Officer, Performance Products Division and President Kobayashi (center)

# The KAITEKI

## Three-Wheeled Bicycle Equipped with an Electric Assist



Weighing just 40kg, this three-wheeled bicycle equipped with an electric assist is the lightest in its class!  
 Battery lasts for three hours on one charge\*, and can travel 100km!

1 Because the solar battery is heavy, the bicycle is placed in a dedicated port where it is charged with stored energy through a non-contact connection.  
 For the sake of reducing bicycle weight, the KAITEKI is charged with energy in a port equipped with flexible photovoltaic modules through a non-contact connection.

### Solving Problems through Repeated Trials and Revisions

The project, which began with test rides on bicycles already available on the market, involved many design meetings to work out the details. Based on this blueprint, the team requested prototype production at a factory that manufactures racing cars. To achieve a lightweight and compact design, the luggage carrier was scrapped and replaced with a cargo pallet that was removable and attached by a hook. In this way, problems were solved through repeated trials and revisions. One of the most important improvements was to incorporate carbon fiber that affected the realization of a comfortable ride. Initially, the bicycle used a spring suspension, but no matter how many times the design was changed, the comfort level

never improved. Finally, they were able to improve comfort by using a carbon fiber flat spring, a patent-pending technological innovation.

At the end of March 2009, the name “The KAITEKI,” bestowed upon the bicycle in recognition that this is a symbol of the MCC Group’s future, was complete. The KAITEKI is already used as a means of transportation inside Group plants and we are now further exploring the various ways it can be used in society.



Meeting to decide on bicycle exterior



Test run of various bicycles equipped with electric assist

### From a Project Member

I experienced worthwhile progress with many good friends through the realization of this dream



**Masayuki Ito**  
Carbon Products Department

Being able to shape KAITEKI through the incorporation of advanced MCC Group technology—from a discussion from this perspective, we ended up with a bicycle. I look forward to the day when The KAITEKI is a part of society.



**Makoto Takada**  
Corporate Marketing Department

A lot of hard work went into the unprecedented creation of a Mitsubishi Chemical bicycle, and it was the enthusiasm of the project members and the orchestrated Group effort that made it a reality. As move toward practical use, I want to deepen cooperation with society.

### Taking Part in Social Model Business to Realize Sustainability

In Yokkaichi, Mie Prefecture, local citizens, companies and municipalities are engaged together in the creation of a model business city. In February 2009, the Ministry of Economy, Trade and Industry held Social System Demonstration Model Business in Yokkaichi and MCC’s futuristic bicycle was chosen as the model business for its research, development and demonstration of next generation batteries.

At the Yokkaichi Plant, The KAITEKI is being used as a means of transportation and to find out exactly how much CO<sub>2</sub> is reduced as a result of its use.



The KAITEKI in use at the Yokkaichi Plant

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## CSR Perspective

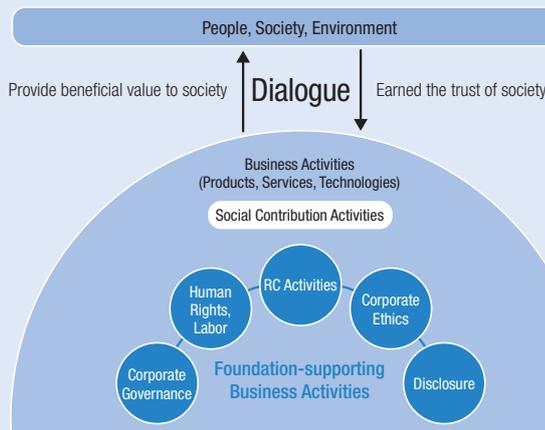
The Mitsubishi Chemical Corporation (MCC) Group, in upholding the Mitsubishi Chemical Holdings Corporation (MCHC) Group philosophy, “Good Chemistry for Tomorrow—Creating better relationships among people, society, and our planet” believes its corporate social responsibility (CSR) is to engage in a dialog with stakeholders as it contributes to society through its broad range of products, services, and technologies. Toward that end, it is important to conduct business activities that are consistent with the MCHC Group Corporate Ethics<sup>1</sup>, the ten principles of the UN Global Compact<sup>2</sup> and other such standards that we, accordingly, treat as management fundamentals. The MCC Group is committed to pursuing business activities underpinned by Responsible Care (RC), corporate ethics (compliance), corporate governance, human rights/labor, and information disclosure (communication).

The MCC Group will continue to strengthen such initiatives providing foundation-supporting business activities, as it creates products, services and technologies in its effort to contribute to the resolution of global environmental problems and international social issues.

<sup>1</sup> The MCHC Group Corporate Ethics can be viewed on the MCHC website.

### <sup>2</sup> The UN Global Compact:

Launched in July 2000 after Kofi Annan, then UN Secretary-General, made the proposal at the 1999 UN World Environment Forum in Davos, Switzerland. The ten principals relate to human rights, labor, environment and anti-corruption and are observed by businesses around the world.



### Corporate Governance

The MCC Group aims to strengthen its corporate governance and further enhance its corporate value by ensuring that management decision-making and operations are carried out appropriately and promptly, by clarifying management responsibilities and by making compliance and the strengthening of risk management its top priority.

### Human Rights/Labor

The MCC Group will respect the human rights and individuality of every person and foster a corporate culture free of discrimination and behavior injurious to human dignity. The Group strives to give individuals opportunities to realize their potential by creating free, open and stimulating work environments based on respect for diverse individual characteristics, by providing fair remuneration and conditions and by fostering reciprocal trust.

### RC Activities

The MCC Group regards responsible consideration for the environment, safety and health as the core focus of its Group-level RC activities.

### Corporate Ethics

The MCC Group is keenly aware of its corporate social responsibilities and will continue to live up to the expectations and trust of all stakeholders by complying not only with laws and regulations, but also with social rules, including corporate ethics.

### Information Disclosure/Communication

As a corporate group committed to openness, the MCC Group will continue to strive to improve public understanding of its business activities by maintaining a high standard of transparency and disclosing accurate information.

## Message from the Director in Charge

### Establishing safety as our top priority, we continue to work toward the thorough implementation of a safety-first policy

In order to promote sustainable production, it is essential to ensure safety at production sites while minimizing impacts on the environment. Accordingly, we believe that the responsible care (RC) activities conducted by the Group since 1995 will become increasingly important in the future.

In line with the safety first policy designated in the *APTSIS 10* medium-term management plan, in fiscal 2008 we asked the Manufacturing Department to review their facility safety measures and standards. After assessing their progress, we ordered them to make further improvements in areas deemed inadequate in terms of the companywide implementation of preventative measures in response to the Kashima Plant fire. However, despite these efforts we failed to achieve our fiscal 2008 targets in regard to occupational safety and facility-related safety. We will continue to strive

for the thorough implementation of the safety-first policy, including the creation of accident prevention measures to achieve a higher degree of safety.

From an environmental perspective, we were able to drastically reduce the amount of chemical substances emissions such as CO<sub>2</sub> and VOCs through meticulous energy-saving activities and the promotion of chemical substance release control measures. The decrease in production also contributed to these reductions. In addition, we enhanced our chemical substance controls in line with global trends, including internationally agreed upon minimization of chemical substance risks and REACH regulations.

Given the current unpredictability of economic conditions, we expect these extraordinary operating conditions to continue, marked by lower rates of production and increasingly strict international chemical substance controls. Nevertheless, we will strive to earn the trust of society through our unwavering commitment to RC activities.



**Kenichi Uno**

Representative Director, Member of the Board, Managing Executive Officer  
Mitsubishi Chemical Corporation

### We will enhance the measures that will serve as a foundation for the company's credibility such as internal control, protection of human rights, and the creation of a good working environment.

In order for MCC to continue business, we consider that it is indispensable to enhance measures that will serve as a foundation for the company's credibility among society and stakeholders, such as compliance, protection of human rights, and the creation of a good working environment.

In order to spread compliance, which we consider as the most important challenge, throughout the company, it is important to continue persistent training and education, and also, it is necessary to implement compliance that meets our business content. In the year 2008, we provided education on compliance to all employees of the MCC group as well as establishing the "Compliance Code of Conduct for the Purchasing Department" which is a set of principles to be followed by those in charge of purchasing.

In order to confirm the relationships between the company and the people who come together at the company once again, as well as share and instill the values the MCC group would like to protect in regards to personnel within the group, the "Basic Concept of Personnel Measures" was presented as an announcement from the President in November 2008. Based on this concept, we have conducted measures associated with work-life balance and diversity of

personnel in the year 2008, such as the reduction of overtime work and working on days-off, as well as setting goals for the further successes of female employees. In regard to the global economic crisis that has occurred since fall, 2008, we have strived to secure employment by conducting measures to share the burden between all employees, such as, bonus cuts, and the reduction of overtime work, instead of requesting voluntary retirement of permanent and contract employees. However, at some departments that experienced a dramatic reduction in work quantity, we did not renew contracts after the termination of contract terms from necessity.

While it is expected that the economic situation will continue to be difficult in the year 2009, we will continue to enhance measures that will serve as a foundation for our business, while aiming to become an MCC group that can be trusted by society even in such difficult times.



**Noriyoshi Ohira**

Member of the Board, Managing Executive Officer, Chief Compliance Officer (CCO)  
Mitsubishi Chemical Corporation

# Process Safety and Disaster Prevention

While striving for safe and stable plant operation, we are engaged in the development and practical use of various evaluation technologies to ensure safety at each stage, from R&D and manufacture to transport and disposal.

## Promoting Priorities for Zero Facility-related Accidents

Viewing safety as the foundation of business activities, Mitsubishi Chemical Corporation (MCC) is engaged in safety activities targeting zero facility-related accidents. Despite its efforts, however, the MCC Group has experienced several accidents. In 2007, a major accident took the lives of four affiliate employees at the Kashima Plant. Additionally, in 2008, one employee of an affiliate was seriously injured in a fire at the Kurosaki Plant.

Fully realizing the seriousness of these accidents, the MCC Group is implementing the *APTSIS 10* mid-term management plan with a particular focus on reemphasizing Safety First Awareness and strengthening worksite professional skills as objectives related to production division security. To this end, MCC carries out thorough accident recurrence prevention measures and promotes the review of facility safety measures and standards. With eyes fixed on the goal of zero facility-related accidents, the Group will also maintain the following three activities that have been a part of its safety initiatives to date.

### Safety Review (SR)

To reduce risks associated with potential hazards, safety inspections are performed in three areas – existing processes, facilities, and procedures.

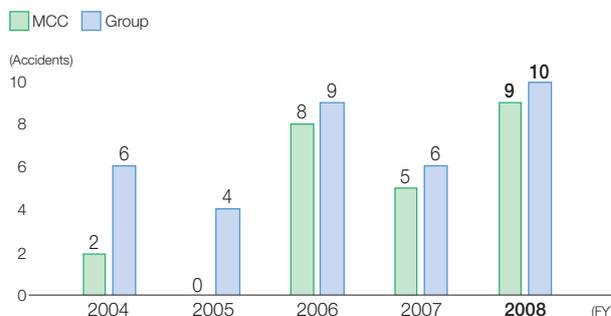
### Facility Reliability Improvement

As a measure to address the aging of facilities, the MCC Group began in fiscal 2004 to implement stricter facility inspections. In addition, since fiscal 2007, we have continued reviews of facility inspection plans and other aspects of management in an attempt to improve the level of security.

### Development and Implementation of Super-Stability Technologies

Super-Stable Operation Technologies (SSOT) and Super-Stable Maintenance Technologies (SSMT) are being developed and implemented to provide technical support to efforts to achieve super-stable operations.

## Number of Facility-related Accidents



## Improving Process, Facility, and Work Procedure Safety, through SA and SR Activities

The MCC Group has conducted Safety Assessment (SA) Activities for evaluating production method and process safety in the development, construction, and operation phases of efforts aimed at starting the production of new products or improving existing processes.

In fiscal 2008, SAs were thoroughly implemented with regard to daily operating conditions and changes in operation and standards were revised to require the presence of SR instructors<sup>1</sup> from outside of the relevant department when conducting SAs.

For existing processes, facilities, and work procedures, the Group established SR instructors at all plants and factories in 2003. These teams comprehensively, systematically, and continuously evaluate risks associated with potential hazards and have pursued Safety Review Activities aimed safety conditions to higher levels.

<sup>1</sup> SR instructors are retired and senior engineers who have abundant knowledge and experience about processes and safety measures. The instructors participate in SRs of plants to help them to perform assessments with objective perspectives, identify latent hazards and use risk analysis techniques in order to mitigate various potential risk factors.

## Enhancing the Intrinsic Safety of Plants by Improving and Utilizing Fire and Explosion Prevention Technologies

In an attempt to enhance the safety of existing technologies and measures, the MCC Group established a Safety Engineering and Environmental Integrity Laboratory at the Mitsubishi Chemical Group Science and Technology Research Center.

To prevent fires, explosions and hazardous substance leakage during product R&D, manufacturing, transport, use and disposal, this laboratory works to advance chemical substance hazard prediction and verification technologies as well as process risk evaluation technologies. It also disseminates safety technology information to the entire MCC Group.

The latest safety-related technology and information is provided to the production sites during SR and SA implementation, improving plant reliability.

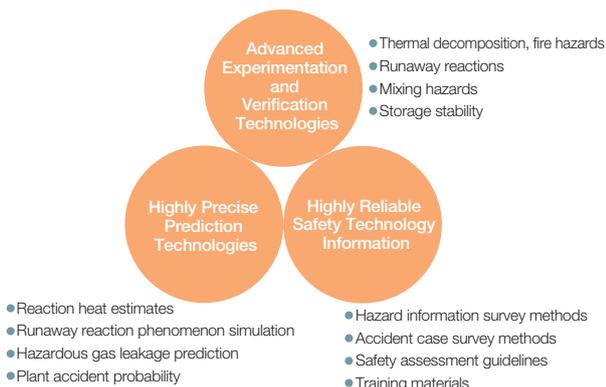
Also, in the event of an accident or trouble, the laboratory will thoroughly investigate the cause from a



Gas explosion evaluation equipment (The only facility granted an approval under the High Pressure Gas Safety Act in Japan)

scientific point of view and propose essential safety measures to prevent recurrence. In fiscal 2008, the laboratory established evaluative technologies to investigate the cause of the December 2007 fire at the Kashima Plant.

### Three Pillars of Fire and Explosion Prevention Technology



## Comments from a Safety Technology Researcher

### Focusing on Safety Education and Improved Evaluation Technologies

Going forward, we must systematically brush up each evaluation technology to heighten the precision of existing safety technology, which I believe is directly linked to improved reliability.



**Yoichi Kunito**  
Production Technology Research and Environmental Safety Engineering Laboratory Chief, Mitsubishi Chemical Group Science and Technology Research Center, Inc.

In addition, if we revise processes with the goal of improving productivity and rationalization of the existing plants, we will be able to identify potential hazards. We must investigate tangible safety measures and thoroughly carry them out, inculcating safety awareness among all employees involved in plant technology and operation. In support of these objectives, starting in fiscal 2009 we plan on holding safety education lectures conducted by laboratory staff. We will continue our efforts to heighten and promote evaluation technologies.

## Focus on Logistics Safety through Accident Prevention Drills

MCC, together with Mitsubishi Chemical Logistics, works to prevent distribution-related accidents. It also holds accident prevention drills for various types of distribution-related accidents at least once a year at its major logistics centers. Weaknesses identified through training are



Tanker truck leakage drill

immediately rectified, and a system capable of responding smoothly to emergencies has been put in place.

# Occupational Safety

MCC is striving to achieve zero accidents for the entire MCC Group by raising safety awareness among employees and emphasizing safety activities.

## Strengthening Simulation-based Training and Education, and RC Audits, with the Aim of Achieving Zero Accidents

Aiming to eliminate occupational accidents, the Mitsubishi Chemical Corporation (MCC) Group has strengthened occupational safety efforts by developing the MCC Group Accident Prevention and Safety Management Guidelines in 2005. These guidelines address topics like the importance of risk prediction and pointers during regular work<sup>1</sup> and during non-regular work<sup>2</sup> and Group companies are revising their own rules and standards to be consistent with them. However, in recent years, we were unable to achieve the objective of reducing the MCC Group lost time injury frequency to 0.1 or lower, in fiscal 2008 the lost time injury frequency remained high, with MCC at 0.43, and the Group as a whole at 0.28.

70% of the lost time injury accidents over the past five years were comprised of falls, drops and being caught. These data indicate shortcomings in communicating risk prediction in basic activities and inadequate communications in relation to directives and confirmations. One of the causes is thought to be a decline in worksite professional skills due to the declining number of experienced employees.

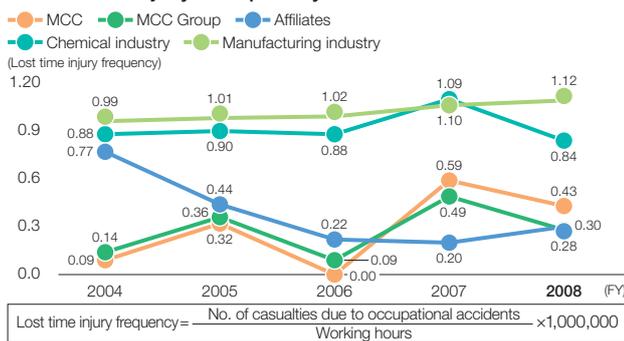
In response, so that workers can clearly predict risks, we enhanced our near-miss and simulation-based training (participants totaled 240 in fiscal 2008). In addition, to make use of incident examples in the future, we promote the sharing of various accident information and verification throughout the Group.

Additionally, efforts were made in fiscal 2008 to ensure that Group company rules and standards regarding changes in work management for altered production processes are been revised and current.

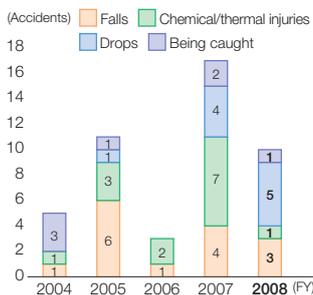
Furthermore, as an added measure, MCC and its Group companies will begin, in fiscal 2008, to implement RC audits, which will provide support for confirming the appropriateness and effectiveness, and ensuring the solid implementation, of safety activities in an attempt to improve the level of safety.

- 1 Regular work:** Work that is repetitive and performed on an ongoing basis.
- 2 Non-regular work:** Non-regular work: Work that is not performed on an ongoing basis.

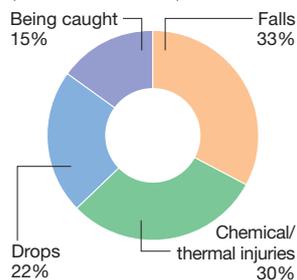
### Lost Time Injury Frequency



### Lost Time Injury Accidents by Types (MCC Group)



### Breakdown of Lost Time Injuries (FY2004 - FY2008)



## Comments from an Education Trainer

### Lectures on Practical Safety Experience Contribute to the Prevention of Occupational Accidents

With the objective of raising sensitivity regarding safety awareness and risk, we conducted a lecture on practical safety experience for employees working on the front lines at each plant.

In fiscal 2008, the number of participants from the entire Group grew to over 7,000. The lecture involved repetition of the "importance of fundamentals" in order to prevent occupational accidents. The lecture addresses onsite phenomena such as (1) clarifying fundamental knowledge and learning theories and principles, (2) personal experience based on experimentation and practice, (3) consideration about what would happen at the actual work site and (4) to experience and understand the meaning of recurrence prevention measures through accident examples. While this lecture is highly regarded for its emphasis on awareness, I want to contribute to a higher level of Group safety through improvements to this content.



**Hideji Kurihara**  
 Planning and Management Department Manager  
 Personnel Development Division  
 MC Human Net

# Occupational Health

MCC is attending to employee mental healthcare needs through the introduction of a counseling system, programs for all employee levels, and other steps.

## Chemical Substance Management in the Work Environment

To ensure the health of employees when handling new chemical substances including nanomaterials, Mitsubishi Chemical corporation (MCC) conducts human health impact assessments beforehand, and takes the necessary precautions.

With regard to chemical substance handling, MCC has always carried out not only legally required workplace environment monitoring, but also voluntary measurements depending on chemical substance handling conditions and other factors, and has implemented exposure measurements as part of its ongoing workplace environment management efforts.

Furthermore, in the past it has used asbestos for the manufacture of caustic soda for research purposes, in ductwork insulation and other materials.

Regular physical examinations are performed as necessary on current as well as retired employees who have handled asbestos in the past.

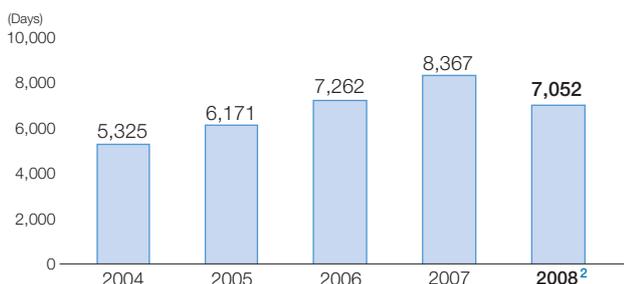
## Mental Health Measures

At MCC, mental health is an important part of overall health management and we are employing measures addressing mental health issues. The training for new employees, first-year employees, other employees and new executives primarily address self-care. The training for management and new senior managers addresses how to respond to mental health issues through personnel management.

In addition, we offer assertion<sup>1</sup>, active listening and cognitive behavior therapy courses at each plant.

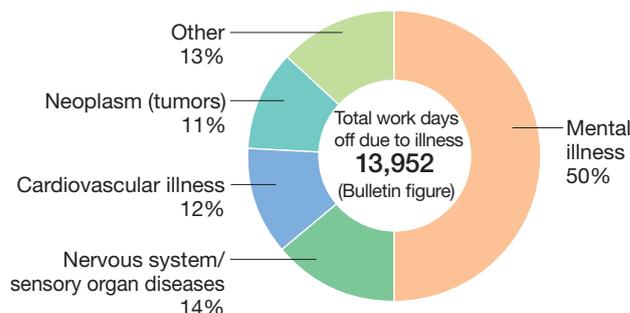
<sup>1</sup> **Assertion:** Refers to self-expression and self-assertion. A psychological interpersonal relationship building method that involves frank communication while considering the feelings of others.

### Lost Workdays Due to Mental Illness (MCC)



<sup>2</sup> Bulletin values

### Work Days Off Due to Illness (MCC 2008)



### TOPICS

#### Mental Health Seminar for Line Managers Aimed at Workplace Invigoration (Held at MCC Yokohama Innovation Center)

Based on the idea that a positive communication environment supports employees' mental health and productive corporate activities, a mental health seminar for line managers was held at the Yokohama Innovation Center in fiscal 2008 to invigorate the workplace through improved communication.

An outside lecturer was invited who conducted group work that involved thinking about creative ways to personally invigorate the workplace while inspiring happiness and smiles. At the end of the lecture, participants came up with objectives such as "energetic greetings," "sincere eye contact while talking" and "increased use of positive language," the efficacy of which they will self-evaluate after two months.

As a next step in workplace invigoration, in fiscal 2009 we plan on including ordinary employees in the seminar.



Mental health seminar

# Preventing Global Warming

We are promoting energy conservation activities centered on petrochemical plants, which account for the majority of greenhouse gas emissions.

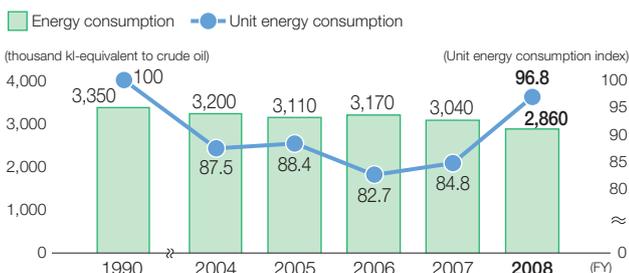
## Reducing CO<sub>2</sub> Emissions through the Promotion of Energy Conservation Activities

Mitsubishi Chemical Corporation (MCC) promotes unit energy conservation activities with the goal of cutting its own unit energy consumption by at least 20% (relative to fiscal 1990) by fiscal 2010<sup>1</sup> in its *APTSIS 10* mid-term management plan.

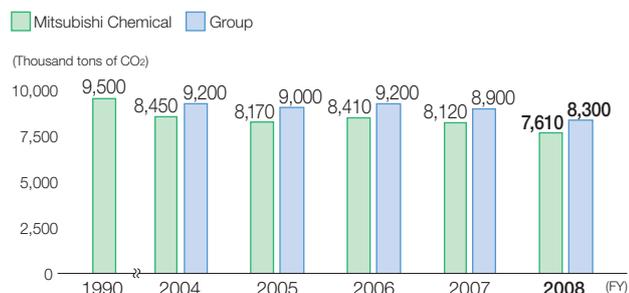
At the MCC Mizushima Plant, a project team was assembled to come up with innovative energy conservation ideas to reduce petrochemical plant CO<sub>2</sub> emissions. In fiscal 2008, there were roughly 20 ideas, including the idea to reuse heat waste for heating, which would contribute to the reduction of CO<sub>2</sub> emissions by approximately 60,000 metric tons. In fiscal 2009, we will begin deliberating the implementation of these ideas while conducting similar activities at other plants.

<sup>1</sup> In 2007, the Japan Chemical Industry Association (JCIA) announced a voluntary environmental action plan aimed at establishing an industry-wide objective of reducing manufacturing division unit energy consumption. The plan targets a 13% reduction (relative to fiscal 1990) over the five-year period from fiscal 2008 – 2012, and includes a nonbinding objective of a 20% reduction over the same time frame. As a JCIA member, MCC aims to achieve these objectives.

### Energy Consumption (MCC)



### CO<sub>2</sub> Emissions



**Note:** CO<sub>2</sub> emissions are calculated based on energy consumption volumes reported in accordance with the Law Regarding the Rational Use of Energy. However, figures may differ from those reported in accordance with the Law Concerning the Promotion of Measures to Cope with Global Warming because of different emission coefficients.

## 20% Reduction in Fiscal 2008 CO<sub>2</sub> Emissions Compared to Fiscal 1990 Levels

In fiscal 2008, the global recession caused a significant decrease in production, which lowered the operational efficiency of our plants and worsened unit energy consumption by 12% compared to fiscal 2007. In terms of the amount of energy used, the enhanced steam trap management, reuse of heat waste and use of pump and blower inverters achieved 36,000kl of crude oil equivalent energy efficiency, resulting in a reduction of 179,000kl of crude oil equivalency compared to the previous fiscal year. In terms of CO<sub>2</sub> emissions, MCC (non-consolidated) emissions totaled 7610,000 metric tons, a reduction of 510,000 metric tons compared to fiscal 2007 and a 20% reduction compared to fiscal 1990 levels. Overall group emissions were reduced by 6.4% compared to the previous fiscal year.

Going forward, in addition to reducing unit energy consumption, the MCC Group will focus its efforts on the development and manufacture of products that contribute to energy conservation as well as further reductions in greenhouse gas emissions across the entire Group to contributing to an overall reduction in the amount of CO<sub>2</sub> emissions in society (Refer to P46).

### Comments from a CO<sub>2</sub> Emissions Reduction Project Participant

#### The Project was a Very Fresh Experience

The project involved understanding bottlenecks through pinch analysis<sup>1</sup>, assessing the cost required for improvements, and feasibility evaluation that took process constraints into consideration. After participating in the project, I looked at the plant in an entirely different way. I now pay attention to temperature differences in key areas, think about the ways in which exhaust heat was used and am more aware of CO<sub>2</sub> emissions reduction in my daily activities. I am inspired to formulate my own ideas on how to further reduce CO<sub>2</sub> emissions.



**Tatsuya Tada**  
Oil Operation and Control Section Production Department I Mizushima Plant Mitsubishi Chemical Corporation

<sup>1</sup> **Pinch analysis:** A methodology for minimizing external energy input by theoretically analyzing the quantity of heat required by the plant for heating and cooling, and effectively combining both.

## Initiatives to Reduce CO<sub>2</sub> Emissions from Shipping

As a specified business operator designated in the Revised Act on the Rational Use of Energy implemented in April 2006, MCC submits energy consumption results and an energy conservation plan to the Ministry of Economy, Trade and Industry each year. As directed in the act, MCC is also working to achieve the objective of reducing energy consumption units by 1% annually in the medium- to long-term through initiatives to reduce CO<sub>2</sub> emissions with its main logistics contractor Mitsubishi Chemical Logistics.

As a result of increasing lot volumes shipped by vessel and tank truck in fiscal 2007, unit energy consumption declined by 2.6%, a major improvement compared to fiscal 2006.

In addition to continuing measures from the previous fiscal year in fiscal 2008, we added fins to ships in an attempt to increase fuel efficiency (averaging a 5% improvement in fuel efficiency). Despite executing various measures including the installation of on-board terminals and eco-tires on trucks to promote environmentally friendly driving, transport load efficiency declined as a result of our significantly decreased sales volume, resulting in only a 0.2% improvement in unit energy consumption compared to last year.



Fins added to ships to increase fuel efficiency

Using fiscal 2006 as the base year, the average reduction in unit energy consumption over the past two years was 1.4% per year, and in compliance with the act, which requires a 1% annual reduction. In fiscal 2009 we are targeting further reductions in energy consumption by continuing existing initiatives as well as through the formulation and implementation of new initiatives.

### Result of Efforts to Reduce Energy Consumption Units

	Fiscal 2006	Fiscal 2007	Fiscal 2008
Energy (GJ)	1,175,069	1,130,753	909,590
Crude oil equivalent (KL)	30,317	29,173	23,434
Shipping weight (million tons)	4.6	4.6	3.9
Shipping volume (1 million ton-kilograms)	1,504	1,486	1,196
Avg. distance (km)	326	326	306
CO <sub>2</sub> emission (metric tons of CO <sub>2</sub> )	80,700 <span style="color: green;">4% reduction</span>	77,800 <span style="color: green;">20% reduction</span>	62,500
Energy consumption unit (KL/1 million ton-kilometers)	20.16 <span style="color: green;">2.6% reduction</span>	19.63 <span style="color: green;">0.2% reduction</span>	19.59

## Comments from an Employee in Charge of Shipping

### Environmentally Friendly Driving through Digi-Tacho Driving Management System

In January 2009, Digi-Tacho<sup>1</sup> was introduced to promote safe driving management and environmentally friendly driving. Despite initial operating difficulties, the system uses data to provide a visual safe driving assessment for individuals and groups of drivers. With the introduction of a reward scheme that fostered healthy competition, fuel efficiency increased by 8%



**Shigeto Tsukamoto**  
Chugoku Branch Manager  
RYOKA LOGITECH CORPORATION

in the first six months. Although some drivers felt uncomfortable with the monitoring of their driving, as the amount of data increases the initiative is expected to contribute to both safety and the environment.

<sup>1</sup> Digital tachograph. Records driving speed and time, contributing to accident prevention and environmentally friendly driving through data analysis.

## Ongoing Promotion of Energy Conservation Activities at the Office and Home

Since January 2008, MCC has been actively involved in the office and home environmental impact reduction activities promoted by the Mitsubishi Chemical Holdings Corporation (MCHC) Group.

In fiscal 2008, "Cool Biz" measures with steps like switching off of lights at lunchtime, more efficient use of air conditioning at the MCHC head office resulted in a 9% reduction in power consumption compared to the previous year (35% with the addition of green electricity procurement) throughout the entire building.

In terms of initiatives in the home, all MCHC Group employees were asked to begin keeping home environmental accounting records<sup>2</sup>. As a result, 1,800 MCC Group families and 2,500 MCHC Group families are participating in these initiatives.



Using green electricity at the head office building

<sup>2</sup> Using the Eco Family system (Overseen by the Japan Environmental Association)

# Overall Chemical Substances Discharge Reductions

The MCC Group is working in unison to monitor its overall chemical substance discharge volume and reduce VOC emissions 50% versus fiscal 2000 figures, by fiscal 2010.

## Steady Reductions of PRTR<sup>1</sup> Overall Discharges Result in 340-Tons Decline Versus Fiscal 2008

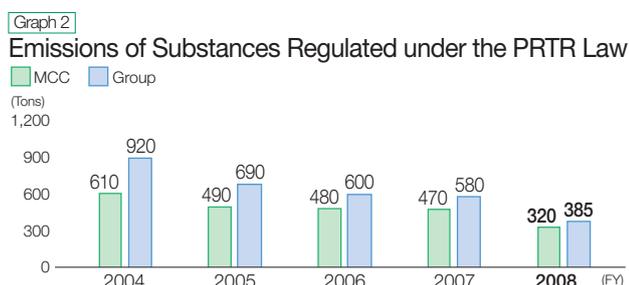
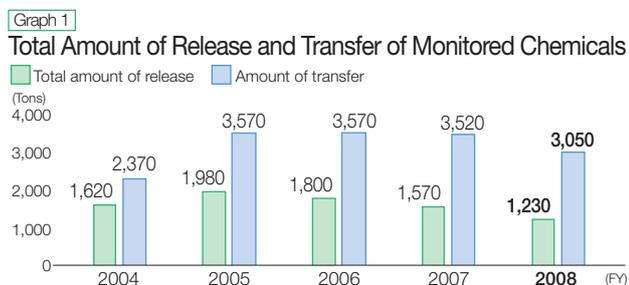
Mitsubishi Chemical Corporation (MCC) is performing and announcing the results of annual studies on discharges (including VOCs<sup>2</sup>) and transfers of the substances regulated under the PRTR Law and the 480 substances specified by the Japan Chemical Industry Association (JCIA).

In fiscal 2008, total PRTR discharge was approximately 1,230 metric tons, approximately 340 metric tons less than fiscal 2007. Of this amount, approximately 90 metric tons were a result of production slowdowns caused by the economic recession. However, the overall amounts have clearly decreased since fiscal 2005 when hydrocarbon VOC compounds were included in the substances regulated by the JCIA. (See [Graph1](#))

In addition, looking only at PRTR-designated substances, as a result of various measures including the introduction of nonsolvent technologies into last year's polycarbonate production which resulted in dichloromethane usage reduction, the review of styrene recovery facility operating conditions and the enhancement of seals on exhaust gas lines containing benzene, overall emissions were 320 metric tons, a 32% reduction compared to fiscal 2007. (See [Graph2](#)) (P46)

<sup>1</sup> The PRTR (Pollutant Release and Transfer Register) Law requires the collection and disclosure of data indicating the types, volumes, and sources of hazardous chemical substances released into the atmosphere or transferred away from plants as constituents of waste materials.

<sup>2</sup> VOCs, or "Volatile Organic Compounds" include substances like toluene and xylene. Considered one of the sources of photochemical oxidants (photochemical smog), VOCs came under regulation for the first time with the passage of the revised Air Pollution Control Action 2006.



## VOC Emission Reduction Targets Achieved One Year Early

The MCC Group is committed to reducing its VOC emissions 50% versus fiscal 2000, by fiscal 2010. To achieve that goal, it is developing measures to recover and detoxify VOCs that would otherwise be released into the atmosphere by exhaust gas flare incineration as well as initiatives to suppress release via the installation of floating roofs on acetone tanks.

As a result of these initiatives, MCC Group VOC emissions in fiscal 2008 were 3,030 metric tons, a reduction of 1,800 metric tons (38%) compared to fiscal 2007 and a 53% reduction compared to fiscal 2000. This represents the early achievement of our goal to reduce VOC emissions by fiscal 2010. Looking ahead, while we expect to be affected by economic conditions and business restructuring, we will continue to further promote reduction initiatives.

### TOPICS

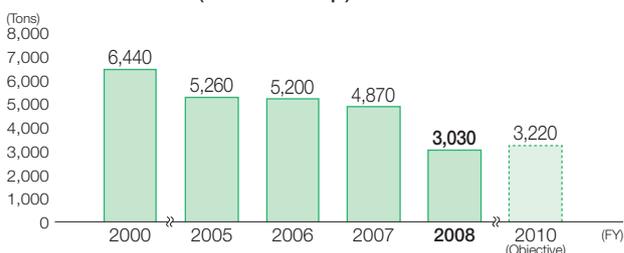
#### Floating Roofs Inside Tanks Result in VOC Reduction of 100 Metric Tons Each Year (MCC Kashima Plant)

Since fiscal 2006, we have been planning and developed floating roofs for use inside 4,000 KL acetone storage tanks.

The project came to a close in fiscal 2008 with the completion of the third acetone storage tank floating roof. This project resulted in the reduction of approximately 100 metric tons of acetone steam being released into the environment each year while storing, shipping and receiving the acetone.



#### VOC Emissions (MCC Group)



# Preventing Air, Water, and Soil Pollution

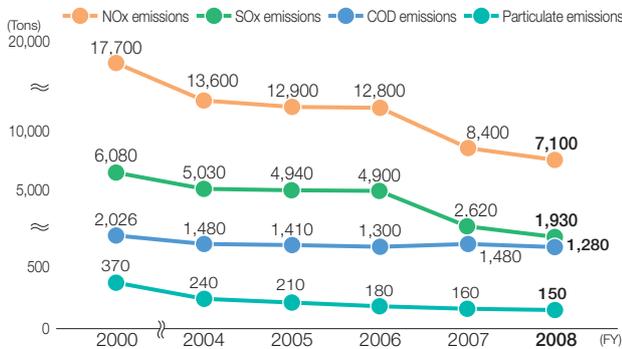
Through ongoing technical advances and capital expenditures, the MCC Group has greatly reduced pollutant emissions.

## Stopping Air and Water Pollution through Legal Compliance and Voluntary Controls

The chemical industry handles a wide range of chemical substances and consumes massive quantities of fossil fuels, which are sources of nitrogen oxide (NOx) and sulfur oxide (SOx). The Mitsubishi Chemical Corporation (MCC) Group, therefore, is continuously taking steps like adopting the use of facilities for removing particulates, NOx, and SOx from atmospheric emissions, and enhancing wastewater management to control discharges of organic substances. (P47)

In connection with these activities, the Group not only complies with the Air Pollution Control Act and the Water Pollution Control Act, it has also created, and strictly abides by, its own tough voluntary standards based on ordinances in the prefectures where it has production facilities, and other regulations.

### Air and Water Pollution Control (MCC)



## Continuing Voluntary Surveys and Appropriate Measures for Addressing Soil and Groundwater Contamination

MCC voluntarily conducts surveys of soil and groundwater contamination conditions at all of its plants.

At locations where contamination is detected, governmental authorities are notified either in compliance with regulations or voluntarily, and decontamination, monitoring, and other measures are implemented on an ongoing basis under prefectural or municipal guidance. To date, study results have been reported to authorities in Kashima, Nagoya, Yokkaichi, Mizushima, Naoetsu, and Kurosaki, and appropriate measures will be pursued on an ongoing basis.

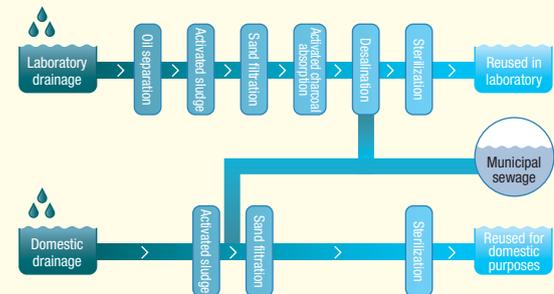
### TOPICS

#### Drainage Recycling Promotion Based on an Environmental Agreement with the City of Yokohama (MCC Yokohama Research Center)

In 1976, the Yokohama Research Center entered into an environmental agreement with the city of Yokohama, introducing a water drainage recycling system. Each day, an average of 400 – 500 m<sup>3</sup> of drainage from research activities and air conditioning (laboratory drainage) undergoes advanced processing to be reused. The recycled water meets the water quality standards for tap water and is used to wash laboratory instruments and for indoor cooling. In addition, domestic waste water from the cafeteria, hand washing and toilets is recycled and used to clean the toilets.

In fiscal 2008, we conserved 180,000 m<sup>3</sup> of laboratory and domestic water.

#### Drainage Recycling



Recycled water used for raising killifish



Coordination Department Engine Power Group in charge of wastewater management

# Waste Reduction and Recycling

Advancing reduce, reuse, and recycling measures, the MCC Group is aiming to achieve zero emissions<sup>1</sup> by fiscal 2010.

## Reducing Final Landfill Disposal by MCC and the Group

The Mitsubishi Chemical Corporation (MCC) Group, in contributing to the creation of a recycling-based society, is moving ahead with the reuse and recycling of sludge, waste plastic, and other industrial waste, with the goal of achieving zero emissions by fiscal 2010.

In fiscal 2008, MCC produced approximately 150,000 metric tons of waste material, which was 16,000 metric tons or approximately 10% less than fiscal 2007. This is mainly a reflection of reduced operations caused by the economic recession, which resulted in decreased amounts of wastewater, incineration as well as sludge and incinerator ash.

Our continued promotion of recycling inorganic sludge, incinerator ash and other waste to be used as cement and paving materials enabled us to achieve a 64% recycling rate, which was the same as in fiscal 2007.

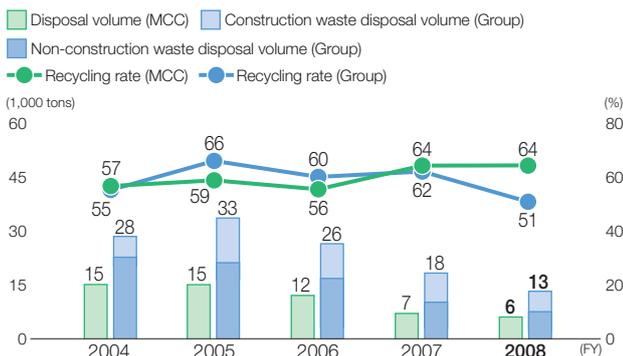
As a result, MCC's final amount of waste disposal was 5,850 metric tons, a 1,000 metric ton decrease compared to the previous fiscal year. As in fiscal 2007, the landfill disposal rate in fiscal 2008 was 4%, which includes 650 metric tons of transient waste from facility dismantling and maintenance. Excluding this waste, the fiscal 2008 landfill disposal rate was 3%.

At the same time, MCC's final landfill disposal rate improved from 6% in fiscal 2007 to 4% in fiscal 2008.

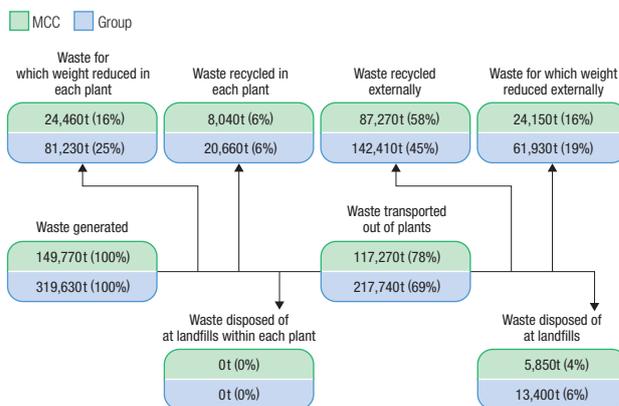
Construction waste represented a significant portion of landfill disposal, and we will promote further efforts toward separating construction waste and increasing recycling rates in an attempt to achieve fiscal 2010 objectives.

<sup>1</sup> The MCC Group considers "zero emissions" to have been achieved when final landfill disposal volume falls below 1% of waste generated — a final landfill disposal rate of less than 1%.

### Final Landfill Disposal Volume and Recycling Rate



### Waste Processing Flow



### TOPICS

#### Significantly Reducing Landfill Industrial Waste by Recycling Inorganic Sludge (MCC Kurosaki Plant)

Inorganic sludge is created during the treatment of industrial water and wastewater from fertilizer manufacturing processes at water treatment facilities. The Kurosaki Plant was producing approximately 500 metric tons of inorganic sludge per year, which represented a large proportion of our landfill industrial waste. We have been considering measures for the effective use of this waste, including use as cement materials, but the wastewater at this plant contains seawater and a high concentration of chloride, which is difficult to reuse.

As a result of ongoing internal and external cooperation on solutions to this issue, we found an industrial waste disposal company that chemically treats inorganic sludge with high chloride concentrations and recycles it into paving and embankment materials. We now outsource the disposal of inorganic sludge to this company, lowering the amount of direct industrial waste landfill disposal to 200 metric tons.

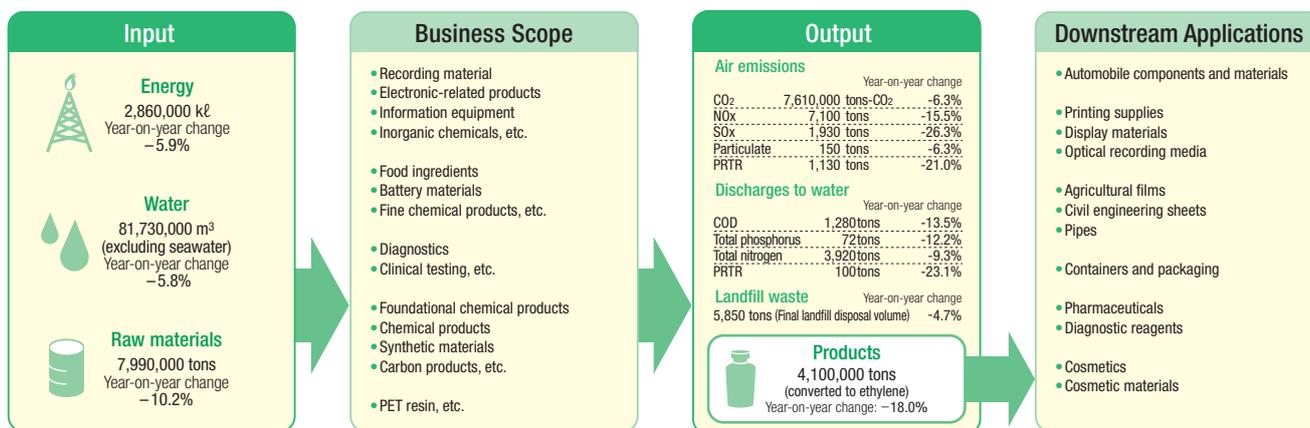
# Material Flow / Environmental Accounting

The MCC Group is calculating and disclosing environmental conservation and safety investments and expenditures based on guidelines issued by the Ministry of the Environment.

## Continuously Identifying and Measuring Material Flows

The Mitsubishi Chemical Corporation (MCC) Group is working to identify material flows (resource inputs and environmental load) in order to more effectively reduce its environmental load. Summarized here are MCC's inputs

(energy, water, and raw material volumes) and outputs (product production volume, and waste and other emissions) by business area and final application.



## Fiscal 2008 Environment and Safety Investments of ¥4.1 Billion and Expenses of ¥41.3 Billion

For fiscal 2008, investments aimed at cutting VOC and other atmospheric pollutant emissions, water pollution countermeasures such as wastewater waste recycling, and other initiatives came to about ¥4.1 billion. Of that total, ¥700 million was invested mainly in new construction and improvement of VOC recovery facilities; ¥1.9 billion in improvements to soot-emitting facilities; ¥800 million in further improvement and new construction of wastewater management facilities.

In addition, overall expenses were ¥41.3 billion, an increase of ¥4.7 billion over fiscal 2007 expenses. This increase mainly comprises a ¥1.4 billion amortization for environmental safety-related facility improvements and the completion of a large scale business promotion, ¥1.8 billion for R&D, ¥300 million for soil cleanup and ¥1.2 billion for statutory inspections and overhauls as a part of regular safety and security maintenance, as well as increased variable expenses from an increase in facility operation resulting from regular maintenance bypass.

### Investment and Expenditure Relating to Environmental Protection and Safety

(Millions of yen)

Costs of Our Activities Relating to Environment Conservation			2008		2007	
Activity			Investment	Cost	Investment	Cost
1	Environmental conservation cost to reduce environmental impacts generated in our sites due to our manufacturing and service activities (on-site cost)		3,688	23,711	4,031	22,499
	Breakdown					
		1) Pollution prevention cost	3,429	16,912	2,644	15,624
		2) Global environmental conservation cost	0	963	0	1,015
		3) Resource recycling cost	259	5,836	1,387	5,861
2	Environmental conservation cost in our management activities (environmental management activity cost)		0	971	0	881
3	Environmental conservation cost in our research and development activities (research and development cost)		0	3,514	0	1,753
4	Environmental conservation cost in our social activities (social activity cost)		154	508	81	502
5	Cost to address damages to the environment (environmental damage cost)		38	348	31	16
6	Other environmental conservation costs (other costs)		0	588	0	765
	Subtotal		3,880	29,640	4,143	26,417
Costs of Our Activities Relating to Environment and Safety			2008		2007	
Category			Investment	Cost	Investment	Cost
1	Cost to comply with safety legislation (safety legislation cost)		174	3,341	126	3,279
2	Cost of voluntary risk management for safety (voluntary risk management cost)		28	7,407	354	6,034
3	Cost of safety management activities (safety management cost)		0	862	0	862
	Subtotal		202	11,610	480	10,175
	Total		4,082	41,250	4,623	36,592

# Chemical Substance Management

To ensure the safety of products and the manufacturing process, the MCC Group identifies the properties of chemical substances and uses that information to properly manage substances through each phase from development, through production, use, recycling, and disposal.

## Basic Position on Comprehensive Safety Management for Chemical Substances

From the chemical products we manufacture to the raw materials, manufacturing process byproducts, waste material and chemical substances in our recycled products, we handle all chemical substances with a precise understanding of related information and voluntarily ensure the strict management and safety of production processes and chemical substances that can have an adverse effect on humans and the environment (Refer to the diagram below).

## Safety Information: Proactive Collection and Appropriate Provision to Customers

The MCC Group actively collects information on the toxicity and hazards of the chemical substances it handles. In addition, we participate the Japan Challenge Program, a joint initiative by the private and the public sectors that collects and disseminates safety information related to existing chemical substances in Japan and contributes to the collection and distribution of safety information in Japan and overseas.

The MCC Group uses information it collects and acquires to prepare Material Safety Data Sheets (MSDSs), which are used to provide proper handling and other types of information to customers. Some MSDSs are also posted on the Internet for public access (<http://www.mcc-msds.net>). In fiscal 2008, we introduced a system to create MSDSs automatically and used for revising MSDSs for GHS<sup>1</sup> compliance. The MCC Group is also actively participating in the Joint Article

Management Promotion-consortium<sup>2</sup> (JAMP), and using tools like MSDS plus<sup>3</sup> created by the Consortium to provide information on chemical substances through the supply chain in tandem with MCC's Green Information Management (P45).

### Comments from an External Stakeholder

#### I Expect Mitsubishi Chemical to Minimize Chemical Substance Risks

In response to the global trend of minimizing chemical substance risks by the year 2020, the aggressive initiatives by MCC to produce mainly upstream materials are highly commendable.

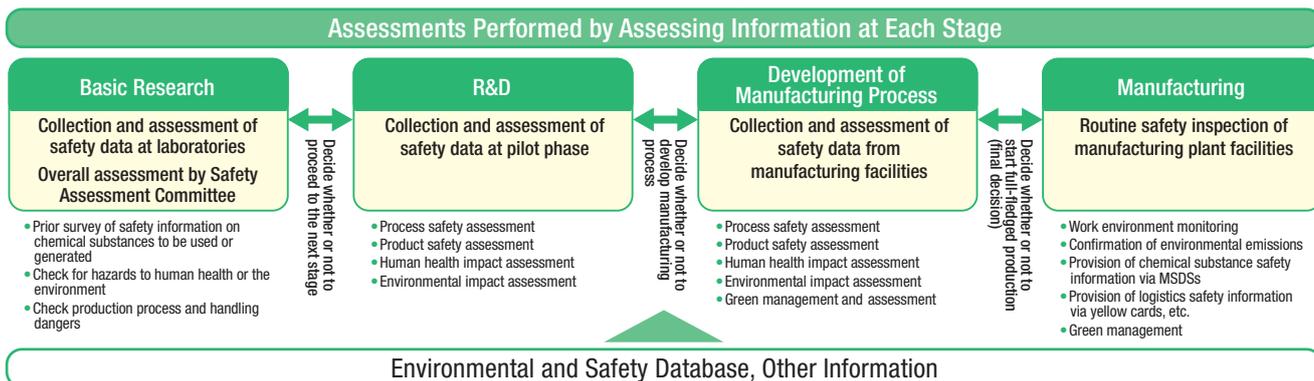
MCC has realized many tangible achievements, including contributions to reduce environmental impact during the manufacture, utilization, disposal and recycling of chemical substance products—over 6,000 products in all, and 300 products for export alone—the initiative in taking part in the cross-industry Joint Article Management Promotion (JAMP) consortium whose mission is to disclose and transmit information throughout the entire supply chain, and activities based on the creation of a support structure for the laws and ordinances in each country where it does business.

I expect MCC to fulfill its role by supporting risk management in developing countries and quality control in its business partner's manufacturing.



**Kazutoshi Kasagi**  
 Director-General of the Secretariat Joint Article Management Promotion-consortium Deputy Senior Director Department of Environmental Business and Technology

## Chemical Substance Risk Assessment Flow in Product Development



## Advancing REACH Regulation Compliance and Other International Chemical Substance Management Activities

In 2007, MCC created a project structure in response to EU REACH regulations<sup>4</sup>, which went into effect in June 2007. With MCC's Environment, Safety and Quality Department as the secretariat, we promote the sharing of response methods and the regular exchange of information with related divisions and Group companies.

In fiscal 2008, we completed the preliminary registration of all chemical substances covered by these regulations contained in export-related products bound for the EU. In addition to promoting official registration arrangements together with other companies handling these chemicals, we exchange information necessary for observing these regulations with customers in Japan and overseas.

As a chief member of the International Council of Chemical Associations (ICCA), MCC's role is centered on overall chemical substance management initiatives to achieve the objective of minimizing chemical substance risks on human health and the environment by 2020. We are strenuously engaged in skill development in developing nations from the standpoint of activity planning and management. In addition, we are creating a risk management structure for chemical substances in the MCC Group in accordance with ICCA recommended protocol.

- 1 The Globally Harmonized System of Classification and Labeling of Chemicals, or GHS, seeks to use easily understood symbols on chemical product labels and safety data sheets to communicate information on constituent chemical substance hazard types and degrees determined in accordance with uniform international rules. Examples of hazardous characteristics include but are not limited to human toxicity and environmental impact.
- 2 The Joint Article Management Promotion-consortium, or JAMP, is a cross-industry organization for properly managing, disclosing and communicating information on chemical substances included in parts, molded components, etc.
- 3 MSDS plus is a common safety data sheet used to communicate the chemical substance information to raw material manufacturers, final product manufacturers, and all parties in between.
- 4 REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulations help ensure the safety of chemical substances for both human health and the environment, by requiring registration, evaluation, and authorization for chemical substances distributed within the EU, and placing restrictions on chemical substances requiring risk management, and their uses.

### TOPICS

#### Supporting the Improvement of Chemical Substance Quality Control Capabilities in Thailand

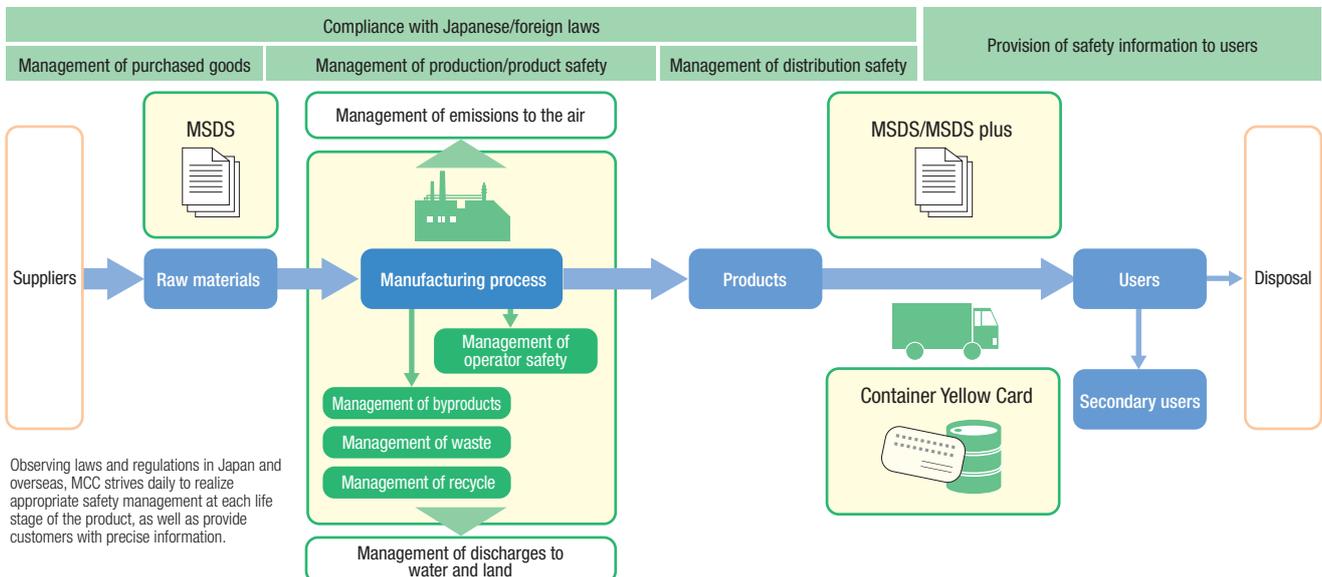
In March 2009, The Federation of Thai Industries held a workshop aimed at improving chemical substance Quality Control Capabilities. The ICCA supports these workshops by providing materials and lecturers to each country where they are held.

In addition to creating and editing materials for this workshop, MCC fulfilled its central role by providing explanations regarding the promotion of overall chemical substances management along with other ICCA members.



Thai workshop

### Overall Chemical Safety Management



# Together with Customers

MCC takes various opportunities to further dialogs with customers, and works to appropriately respond to customer demands and requirements.

## Basic Ideas

The Mitsubishi Chemical Corporation (MCC) Group believes that all our products and services must meet the customers' expectations in terms of safety and high quality, and that customers determine the value of those products and services. Putting this idea into practice, we always listen earnestly to our customers' demands, opinions and questions, with the entire Group striving to provide the appropriate solutions.

## Yokkaichi Chemistry Plaza

In addition to plazas at the MCC Head Office building and the Yokohama Research Center, the Yokkaichi Chemistry Plaza—the third Chemistry Plaza—was completed in October 2008.

The three Chemistry Plazas represent strengthened efforts to establish an environment to interface with customers and provide them with various MCC Group solutions to their needs.



Yokkaichi Chemistry Plaza

## Seminar for Photographers

MCC communicates directly with its customers to ensure an accurate understanding of its products and their usage

In June 2008, Mitsubishi Kagaku Media conducted an informational briefing on the topic of digital data DVD-storage methods and media disk selection at the

second technology and research meeting hosted by the Photographic Society of Japan. 80 professional photographers attended this meeting.

The meeting touched on the digitalization of work, data storage and disk handling methods, and introduced the examples of DVD media use and appropriate DVD media usage from the photographer's perspective.

## Comments from the Information Center Chief

### We Provide Information across the Group and Interface Directly with Our Stakeholders

In July 2002, MCC became the first Japanese comprehensive chemical manufacturer to establish an information center. Interfacing directly with our stakeholders, the information center meets a wide range of needs and responds swiftly to inquiries regarding product-related questions and other items, responding to more than 7,000 inquiries each year.



**Yoko Asai**  
Information Center  
Chief  
Mitsubishi Chemical

We strive to accurately respond to inquiries and resolve potential issues to build better relationships with our customers. As a materials manufacturer handling a great variety of products, although it can be difficult to provide a detailed response to inquiries regarding the products of each division or Group company, we nevertheless strive to provide cross-Group solutions. Aiming to become a useful information center for as many of our stakeholders as possible, we are enhancing our Group company product information database and plan to provide solutions through our website as well.

# Together with Business Partners

Even as we strive to ensure legal compliance in our purchasing activities, we are also devoting significant efforts to securing the safety of the employees of affiliates.

## Basic Ideas

The cooperation of a great number of business partners, including raw material suppliers, plant maintenance companies, shipping companies and subcontractors working on-site are essential to conduct the ongoing daily business activities of the Mitsubishi Chemical Corporation (MCC) Group. We strive to cultivate relationships of trust through fair and impartial dealings to continue growing along with this wide range of business partners.

We are examining and planning ways that the Purchasing Unit can fulfill its role for the implementation of a company-wide life cycle analysis in fiscal 2009.

## Formulation of Subcontractor Act Compliance Rules

In April 2008, MCC formulated internal rules to ensure thorough compliance with the Act Against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors (Subcontractor Act). In addition to establishing a structure to ensure compliance and clarify which business partners the Act applies to, the rules concretely define business process items involving ordering and payment that to be observed and followed. Informational briefings and audits are conducted internally to ensure thorough adherence to these rules.

As the fiscal 2008 global recession progressively worsened and the appropriateness of subcontractor dealings became an increasingly important subject, MCC conducted business transactions in accordance with the Subcontractor Act compliance rules.

## Preparation of the Purchasing Unit Compliance Code of Conduct

MCC formulated a Purchasing Unit Compliance Code of Conduct, which covers all employees involved in purchasing work. Implementation of these new guidelines began in June 2008. The code of conduct incorporates both basic items purchasing unit employees must be aware of in pursuing their daily activities, and various criterion extending to non-business, ordinary matters like traditional mid-year and end-of-year gifts, and entertainment. In addition, we conduct informational briefings both internally and for our business partner

companies at each plant in an attempt to thoroughly inculcate the code of conduct. We observe compliance with all our business partners.

## Conducting a General Safety Rally with Our Partner Companies

In May 2009, we conducted a Regular Maintenance (Periodic Maintenance) Construction General Safety Rally at our Kashima Plant. The objective of this meeting was to ensure safety during regularly scheduled chemical plant maintenance. The meeting was attended by 2,100 MCC Group and partner company staff. On the day of the event, after an admonitory speech by the plant manager and safety declarations by the safety and health management and partner company representatives, all in attendance recited the safety slogan and confirmed their resolve to work safely and enhance safety awareness to achieve the goal of zero accidents.



General Safety Rally

## Comments from a Purchasing Manager

### Examining Effective CSR Procurement Methods with Our Business Partners

MCC conducts purchasing activities in accordance with its purchasing guidelines (P42), striving to create fair and impartial relationships with our business partners. In addition to the principles and codes of conduct that apply to purchasing activities, our purchasing guidelines also include the creation of CSR-related items including requirements for our business partners.

Recently, CSR procurement, including supply chain CSR activities, has been receiving a lot of attention. Through our purchasing guideline, MCC requests that its business partners also engage in its initiatives for CSR. We believe that continuous and earnest engagement in CSR procurement is necessary to contribute to the creation of a sustainable society through the entire supply chain. To this end, we are currently investigating the most effective methods of CSR procurement.



**Masayuki Miyakawa**

Planning and Management Group  
Purchasing and Logistics Department  
Mitsubishi Chemical Corporation

# Together with Employees

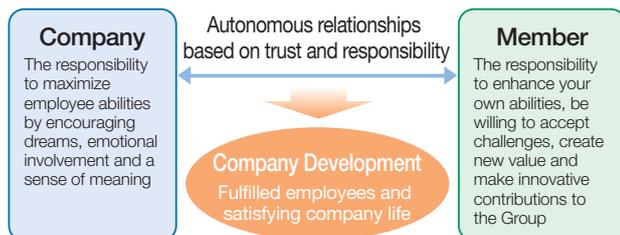
We strive to create a motivational workplace that instills employee job satisfaction by respecting unique and diverse individuality.

## Clarified Thoughts on Employees Announced as a Presidential Proclamation

In November 2008, the Basic Thinking on Personnel Policies was announced as a presidential proclamation. Based on this thinking, the MCC Group has engaged even more aggressively in personal development and the creation of a positive organization and culture as keys to corporate development.

### Basic Thinking on Personnel Policies

**Developing Personnel to Unlock the Future**  
The sources of corporate development are people and organization



### Three Points We Value

- 1 The right person in the right place
- 2 Satisfactory communication
- 3 Diversity

## In Response to the Global Economic Crisis

With respect to the occurrence of surplus employees as a result of business downsizing and withdrawal up to now, with the understanding and cooperation of labor unions MCC places the highest priority on ensuring employment, responding with workplace reassignments and postponement of new hiring. Since the global economic crisis began in the fall of 2008, rather than soliciting the resignation of full-time and contract employees, we have made an effort to retain our employees through temporary layoffs, bonus cuts, reductions in overtime hours worked and other initiatives designed to allocate the burden of these difficult times equally among all employees. While we regard service contracts and temporary workers in the same way, in some sections where the workload has markedly declined, we have had no choice but to refuse renewal of employee contracts once their term has expired.

## Six Tangible Objectives for the Further Promotion of Female Employee Activities

On November 2008, the President announced his declaration on the promotion of female employee contribution in the MCC Group. Support of the activities of each employee without regard to gender, age, or nationality is essential to the continued existence and growth of the Group.

In addition to responses to the Act on Securing, Etc. of Equal Opportunity and Treatment between Men and Women in Employment and the Act on the Welfare of Workers Who Take Care of Children or Other Family Members Including Child Care and Family Care, the MCC Group has engaged in various initiatives to promote the success of female employees. The President's announcement identifies six objectives for the further promotion of female employee contribution.

### Objectives for the Further Promotion of Female Contribution Announced by the President

1. Expand the assignment of female employees in leadership management positions
2. Expand the ratio of female hires
3. Expand the occupational field
4. Lengthen the number of years of service for employees raising children (compatibility between work and child raising)
5. Promote equal opportunities for skill and capability development
6. Promote participation in management policy decision-making process

## Proactively Contributing to the Skills Development and Social Participation of People with Disabilities

MCC is steadily moving forward with the establishment of special subsidiaries and the adjustment of working environments to help people with disabilities develop and exercise skills through participation in society and work.

After having achieved the statutory employment ratio (1.8%) for people with disabilities in 2001, MCC has continuously and significantly exceeded the legally mandated employment ratio. (P42)

## Awareness Survey Conducted on Group Employees

As a part of our communication with employees, the MCC Group conducted an employee awareness survey

in October 2008. This was the second survey conducted since the first survey in 2006, and the scope was expanded to include all Group employees.

By asking employees their opinion and degree of satisfaction with items that influence their vitalization, such as their duties, superiors, workplace, personnel treatment, management philosophy/directions and corporate culture, we are able to ascertain the health of the organization and the reflection of our efforts to create a comfortable workplace in our management policies. We plan on conducting employee awareness surveys on a regular basis.

### Efficient, High Quality Training in Line with the Basic Thinking on Personnel Policies

As proclaimed in the Basic Thinking on Personnel Policies announced in fiscal 2008, highly skilled personnel are essential for the MCC Group's corporate development.

At present, the MCC Group is facing an extremely severe management environment. For future development, we are moving forward with a review of the role of training from a variety of perspectives to provide more efficient and high quality training.

Continuing job-level-based training, the Yume Series began in fiscal 2008. We aim to improve the worksite professional skills of each department by enhancing the vitalization of young employees who work on the front lines as well as in middle management.

#### MCC Group Skill Training Programs

	Training for Next-generation Business Leaders	Job-level-based Training (Yume Series)	Area-based Training	Tech Training	Business Skills/Mind			
Executives	Management Seminars		Management Training	Internet-Based Training System (E-STAGE)	Coaching Training			
	General Course	Training for new senior managers	Executed at each location for each department			Internationalization Training (English, Chinese, Korean, International business)		
	MOT Course	Training for management					Accounting, law, sales, intellectual property, human resources, communications, presentations, problem-solving skills, matters, etc.	
	Junior Management Seminars	Training for new executives	MBO (Objective management) training					Human Rights Training
	Various Overseas Training Programs	Training for staff	Training for senior workers					
General/Research Purpose Overseas Study		Training for first-year employees	Training for team leaders/assistant senior workers					
General Employees	Foreign Languages/Business Training	Training for new employees	Training for area staff	Technical and Safety Training	Coaching Training			
			Training for mid-level staff					

### Proactive Promotion of Human Rights Education and Information Programs Aiming to Become a Comfortable and Spiritually Rich Corporate Group

Aiming for a comfortable and spiritually rich corporate group, since 1980 the MCC Group has been proactively engaged in education and enlightenment activities to correctly understand and deepen the awareness of human rights issues.

In terms of education, in fiscal 2008 we conducted 440 group training sessions for 10,824 participants, including seminars for senior management, programs for all employee levels, training for in-house instructors and programs for employees working in specific areas. We also conducted Human Rights e-training via our intranet that 12,964 employees took advantage of. To grasp the human rights conditions in countries where our Group companies are located as well as the human rights conditions at Group companies overseas, we conducted Overseas Group Company Human Rights Training in Malaysia, Thailand, Indonesia and Singapore in fiscal 2008. In terms of human rights awareness, from December 4th to 10th each year is Human Rights Week, during which we collect human rights slogans from employees and their families. In fiscal 2008, we collected 15,841 slogans, entering the best one in the slogan contest held by the Industrial Federation for Human Rights, Tokyo. MCC was presented with an Outstanding Award in the Family Category and the Award Commemorating 60 Years Since the Universal Declaration of Human Rights.

In addition, to ensure a prompt and appropriate response to discrimination and harassment consultation, human rights counselors are designated to handle inquiries and complaints at all MCC Group offices in Japan.

#### Human Rights Promotion Guideline (Preamble)

In accordance with the Mitsubishi Chemical Holdings Corporation Group Corporate Ethics Charter, the Mitsubishi Chemical Corporation Group, in recognition of the importance of human rights education and as a corporate social responsibility, aims to promote within the MCC Group understanding of discrimination historically suffered by certain groups in Japan, and other human rights problems, and build companies that see through, and do not tolerate, discrimination and harassment. Toward these ends, it hereby sets forth its Human Rights Promotion Guideline.

#### Human Rights Promotion Policy

The MCC Group, with regard to discrimination historically suffered by certain groups in Japan, the impetus for this initiative, and all other human rights problems, aims to be a corporate group that continuously pursues human rights education in accordance with the Human Rights Promotion Guideline, offers employees a healthy, productive work environment, and is a magnanimous organization recognized by society.

# Social Contributions

The MCC Group promotes activities supporting the development of the next generation's leaders and pursues various other forms of communication and social contributions.

## Basic Ideas

The Mitsubishi Chemical Corporation (MCC) Group thinks the symbiosis with countries and regional communities with relevance to our activities is important, and while deepening its understanding of national and local culture and customs, we actively participate in social contribution activities as a good corporate citizen. Each company in our Group will continue their activities in the areas of Development of the Next Generation, global environment, scholarship, social education, culture and the arts. Also, MCC supports employee volunteer activities through the establishment of volunteer leave and other systems.

## Participation in Yume Kagaku 21 to Convey the Fascination of Chemistry to Children

In August 2008, MCC participated for the second straight year in Yume Kagaku 21, sponsored by the Japan Chemical Industry Association. This event aims to enlighten children about chemistry and enables the chemical industry to contribute to society. Young employees from the Yokohama Research Center and the Head Office area participated in classroom experiments for children under the theme Mix and Separate to See the Mysterious Colors! By separating colored water made from natural food coloring and bath powders using silica gel and filter paper, and using LED lamps to check a white light created by mixing the three primary colors, the children experienced the joy of chemistry.



Yume Kagaku 21



## Participation in the Youngsters' Science Festival

MCC and M-Net (currently MC Humanets) participated in a Youngsters' Science Festival held in Kurashiki, Okayama Prefecture in November 2008. The objective of this festival was to convey the fascination of science through experience to young people as part of a national event to promote science education. Children who stopped by the MCC booth took part in experiments that created a fuel cell from tea and juice and the creation of slime, while children that stopped by the M-Net booth engaged in experiments that demonstrated the buoyancy of water.



Youngsters' Science Festival

## Conducting a Classroom Laboratory in Primary and Junior High Schools

As a part of its regional contribution activities, the TM Air Kashima Plant has participated the events hosted by nearby primary and junior high schools five to six times each year since 2003 conducting a classroom laboratory to cultivate children's interest in the sciences.

Between October 2008 and February 2009, experiments freezing marshmallows and gumballs were conducted using liquid nitrogen produced by TM Air. The children were amazed at their first view into the world of super low temperature.



Classroom laboratory

## Support for the Education of the Next Generation in Developing Countries

As a member of international society, the Mitsubishi Chemical Holdings Corporation (MCHC) Group has been working to solve the problem of poverty. In fiscal 2006, it began to work with NGOs and local people in developing countries to support the Local Citizens Building Schools Operations. These projects aim to provide children with

a chance at an education and to use schools as focal points for spurring improvements in overall community capabilities and vitality.

In fiscal 2008, we supported the construction of new school building, provision of classroom furnishings, installation of solar panels and water well at the Kamsaongho Primary School in Burkina Faso, West Africa. In addition, we supported the construction of new school building, provision of classroom furnishings and toilet and water storage tank installation at the Anlong Choa Primary School in Cambodia.

In 2009, with student volunteers from Waseda University we will familiarize the people in Laos with the custom of washing hands and verify and demonstrate the effects.



Water well installed  
(Kamsaongho Primary School)  
(Source: Plan Japan)



Newly constructed school building  
(Anlong Choa Primary School)  
(Source: Shanti Volunteer Association)

## Comments from an Employee School Construction Project Participant

### A More Comfortable Earth through the Power of Chemicals

Upon hearing of the Burkina Faso primary school construction project, I wondered if we could offer support unique to Mitsubishi Chemicals, so I proposed the provision of a solar power system. I thought about which system would be the most appropriate for the school, and conducted thorough demonstrations at Tsukuba Solar Park, Mitsubishi Chemical's R&D base. The system was transported to the school through the cooperation of the Mitsubishi Chemical Logistics Corporation, with the project turning into a larger-scale effort than expected and involving various Mitsubishi Chemical Group companies. I was extremely happy to hear that night classes had begun after installation, and I look forward to development in the region centered around this school.



**Takayuki Yoneda**

Corporate Marketing  
Department  
Mitsubishi Chemical  
Corporation

## Supporting Young Designers and Advancing Design through Competitive Awards

Aiming to contribute to the promotion of design and support young designers, since fiscal 2006, Mitsubishi Chemical Corporation (MCC) has been helping to sponsor the Mitsubishi Chemical Junior Designers Award, Japan's only competitive awards for graduation design projects, which integrates schoolwork and accepts submissions of graduation design projects representing the first



Fiscal 2008 awards ceremony

step towards becoming a professional from across Japan. In fiscal 2008, 202 projects were submitted and 14 received special recognition.

## Contributing to the Cultivation of Next Generation Researchers through Participation in the Tokyo University Practice School

Since 2001, each year MCC and the Mitsubishi Chemical Group Science and Technology Research Center, in conjunction with Tokyo University, plan and conduct the Tokyo University Practice School (Todai PS). Differing from an internship where only students can participate, the Todai PS lasts for 40 days during summer vacation and involves both students and university tutors stationed at the Yokohama Innovation Center who conduct advanced R&D activities on a full-time basis. In fiscal 2008, seven students and three tutors participated in three different research subjects.

The university side regarded the experience as an opportunity to think about the kind of research activities required by society and to learn about the corporate problem-solving process. We will continue our contribution to the cultivation of next generation researchers and to the vitalization of industry – university collaboration research by fostering mutual understanding with the university.

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## Fiscal 2008 Activity Results and Fiscal 2009 Plan

	Priorities	Target for Fiscal 2008	
Process Safety and Disaster Prevention	Achievement of zero facility-related accidents	Reemphasizing Safety First Awareness	
		Identification of causes of risks, continued follow-up of individual themes	
		Voluntary safety approval	
Occupational Safety and Health	Prevention of occupational accidents	Lost time injury frequency <0.1 Increased efforts targeting companies with high occupational accident rates	
	Occupational health management	Introduction of job-level-based mental health education	
		Ongoing health checks for retirees who request them (substances listed in health service passbooks)	
Environmental Conservation	Prevention of environmental accidents and problems	Maintenance of zero environmental accident record	
	Reduction of PRTR substance emissions	Implementation of countermeasures focusing on environmental concentrations	
	Reduction of VOC emissions	Continuing reduction in line with reduction plan	
	Reduction of landfill disposals Effort to achieve zero emissions	Continuing efforts to reduce disposals at landfills by 20% compared to fiscal 2008	
	Global warming countermeasures	Continuing promotion of energy conservation during production	
3% improvement in transportation-related unit energy consumption over three years			
	Reduction of environmental impact at the office and home		
Chemical Safety/Quality Assurance	Compliance with international chemical safety regulations	Develop and implement system for preparing GHS-compliant MSDS	
		Perform preliminary REACH registration, prepare for regular registration	
	Promote international chemical substance management activities		
	Product information management, establishment and implementation of green management system	Continue operating and improving systems	
RC Communication	Mitsubishi Chemical promotion of Group-wide implementation of RC activities	Promote communication of Mitsubishi Chemical Group RC participation at each company	
	Development of safety culture	Conduct Group company RC Audits	
	Promotion of communications	Change from Mitsubishi Chemical RC reports to CSR reports and distribute	

Self-Evaluation ★★★: Achieved ★★: Mostly achieved ★: Further effort needed

	Performance	Assessment	Target for Fiscal 2008	Related Page
	Implemented as planned, but ten accidents occurred	★	Ongoing reemphasis on Safety First Awareness Implement process and safety education	P17
	Implemented at each plant	★★★	Ongoing	P17
	Certification renewal for Mitsubishi Chemical Yokkaichi Plant Certification renewal for Mitsubishi Chemical Mizushima Plant	★★★	—	—
	Lost time injury frequency: 0.28 (10 lost time injury accidents) Meetings held to examine results at each group	★	Lost time injury frequency <0.1 Ongoing	P19
	Introduction of mental health education to new employees, first year employees, staff and new executive training Implement training sessions at each plant	★★★	Ongoing implementation of health checks for retirees who request them	P20
	Implement retiree health checks not only for asbestos but also for a wide range of items (196 patients, 301 items)	★★★	Zero environmental accidents	P20
	2 environmental accidents	★	Continue, with emphasis on benzene measures	—
	195 metric ton reduction in PRTR-designated substances	★★★	Advance facility measures being planned	P23
	Achieved fiscal 2010 target (50% reduction compared to fiscal 2000 levels) Reduced emissions by 1,800 metric tons compared to previous fiscal year (53% reduction compared to fiscal 2000 levels)	★★★	Promote planning at each company	P23
	Landfill disposal for the entire Group reduced 25% versus the prior fiscal year	★★	Continuing promotion of energy conservation	P25
	Unit energy consumption increased by 12%, reduced emissions by 6.3% (Mitsubishi Chemical) and 6.4% (Group) compared to the previous fiscal year	★★	Implement plans for individual companies and units	P21
	Unit energy consumption reduced 0.2% versus the prior fiscal year (Mitsubishi Chemical)	★★	Ongoing reduction of environmental impact at office and home	P22
	Reduced CO <sub>2</sub> at the Mitsubishi Chemical Head Office building by 20% (compared to fiscal 2006) Started home environmental accounting records for the conservation of energy at home	★★★	Preparing GHS-compliant MSDS	P22
	Completed development of a system for preparing GHS-compliant MSDS	★★★	Prepare for regular registrations	P27
	Completed preliminary registrations for all scheduled substances Began preparation for regular registrations	★★★	Ongoing promotion of international chemical substance	P28
	Joined International Council of Chemical Associations (ICCA) initiatives	★★★	Management activities	P28
	Began examining system operations and improvements	★★★	Continue operating and improving systems	P45
	8 information exchange meetings held Held RC Meetings in Asia and North America. Establish Safety Day	★★★	Continue to hold information exchange and other meetings	P10
	Group company RC Audits: 36 plants at 28 companies	★★★	Move on to RC Audits Continue holding	P44
	Publish MCC CSR Report, plant site report, Group company RC report	★★★	Enhance, continue communication through CSR report publication	—

## Communication with Stakeholders

	Basic Policy	Communication Tools	Communication Opportunities
Customers	We engage in dialog with our customers and adopt a customer-centric approach to respond with utmost sincerity and provide safe, high-quality products and services.	<ul style="list-style-type: none"> <li>•Website</li> <li>•News releases</li> <li>•Product brochures</li> <li>•MSDS</li> <li>•CSR reports</li> <li>Others</li> </ul>	<ul style="list-style-type: none"> <li>•Marketing and sales activities</li> <li>•Information Center</li> <li>•Chemistry Plaza</li> <li>•Seminars on Group technologies</li> <li>•Trade shows</li> <li>Others</li> </ul>
Business partners	Based on the fundamental understanding that all our suppliers and vendors are our partners in conducting business, we will endeavor to foster mutual trust through fair and equitable transactions.	<ul style="list-style-type: none"> <li>•Website</li> <li>•News releases</li> <li>•CSR reports</li> <li>Others</li> </ul>	<ul style="list-style-type: none"> <li>•Purchasing activities</li> <li>•Information Center</li> <li>Others</li> </ul>
Employees	We will strive to create a motivated workplace that provides job satisfaction to constituent members, by respecting diversity and individuality, creating an energizing environment where individuals are given a chance to manifest their best qualities, as well as by fostering mutual trust amongst employees through fair treatment.	<ul style="list-style-type: none"> <li>•Group magazines</li> <li>•Intranet</li> <li>•CSR reports</li> <li>Others</li> </ul>	<ul style="list-style-type: none"> <li>•Management and labor committee</li> <li>•Compliance hotline</li> <li>Others</li> </ul>
Regional communities and greater society	We will strive to deepen our understanding of the cultures and customs of the countries and communities in which we operate our businesses, respect their social norms, and harmoniously co-exist with local communities as good corporate citizens through participation in activities that contribute to society.	<ul style="list-style-type: none"> <li>•Website</li> <li>•News releases</li> <li>•CSR reports</li> <li>Others</li> </ul>	<ul style="list-style-type: none"> <li>•Meetings to exchange opinions with local communities</li> <li>•Plant tours</li> <li>•Participation in local events</li> <li>•Hold events in local areas</li> <li>•Dialogs with NPOs</li> <li>Others</li> </ul>

## Corporate Governance

### Corporate Governance Views and Structure

MCC regards management decision-making, efficient and timely execution of operations, clarification of management responsibility, strict compliance, and solid risk management as its most important corporate governance concerns, and works to further enhance corporate value.

MCC's fundamental management organs include its Board of Directors, Executive Officer Committee, Corporate Auditors, and Board of Auditors. In addition, we introduced an executive officer system to advance the separation of management and execution, and have established internal regulations covering the Board of Directors, as well as other decision-making organs, and the authority of individuals. These initiatives help to ensure efficient and proper management decision-making and execution.

## Board of Directors

The Board of Directors, based on the Board of Directors Regulations and other related regulations, makes decisions on important MCC management matters and fundamental Group management matters, and oversees the execution of duties by directors. In principle, the Board of Directors Meeting is convened once a month.

## Management Committee

The Management Committee, as an organ for assisting the President and Representative Director in decision-making, discusses investment, financing, and other important matters of business execution for both MCC and the MCC Group companies. Actions related to matters of particular management import discussed by the Management Committee must be approved by the Board of Directors prior to execution. The Management Committee meets twice a month and is composed of the president, standing executive officers, executive representatives of principal direct investees and statutory auditors.

## Statutory Auditors and Board of Auditors

Auditing operations are performed by statutory auditors and the Board of Auditors. The Board of Auditors Meeting, in principle, takes place once a month. As of the end of June 2009, the Board of Auditors consists of four statutory auditors, including two outside auditors.

## Other

When MCC's Compliance Promotion Committee, Risk Management Committee, RC Promotion Committee, and other committees and bodies make decisions on important matters, those decisions are either reported to, or submitted for approval by, the Board of Directors or the Executive Officer Committee.

# Internal Controls

## Basic Concepts on and the Status of the Internal Control System

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 reviews any specifics of the policies as needed.

In fiscal 2008, in response to enforcement of the internal control report system of the Financial Instruments and Exchange Law, MCC developed the internal controls concerning financial reporting, and then conducted an assessment that confirmed the effectiveness of this development and the practicality of the controls.

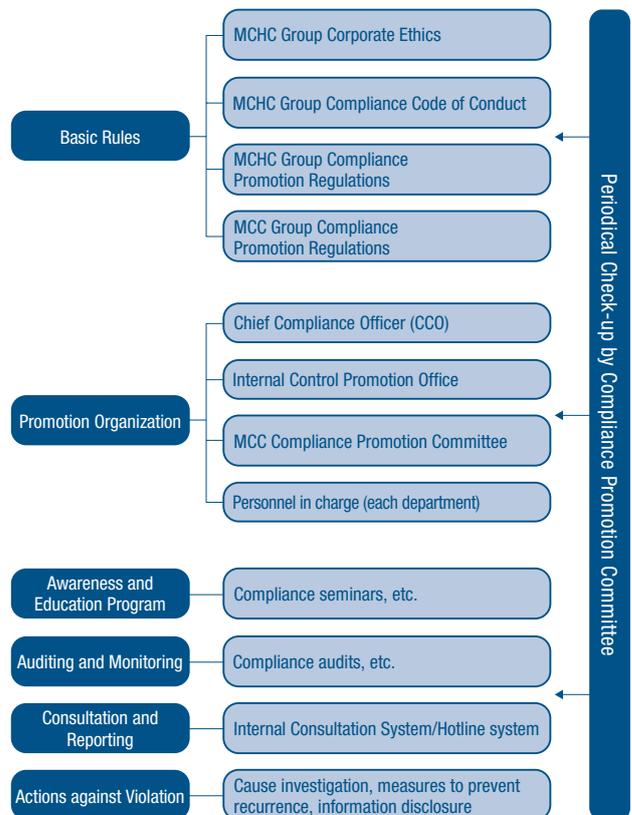
# Compliance

## Basic Ideas

The Mitsubishi Chemical Corporation (MCC) Group positions compliance as the indispensable basis for continued business activities and gives the highest management priority to strengthening compliance. More than simply legal compliance, these activities have a broad meaning that includes the observance of corporate ethics and societal rules, and we consider it very important that the corporate activities conducted with society stay within the scope of common sense by following rules and engaging in all activities justly, equitably and sincerely.

Based on these considerations, the MCC Group established a compliance promotion program for basic regulations, promotional structures, education and training programs, auditing and monitoring structures and the employee hotline, and works to ensure that they are appropriately implemented and managed.

## Compliance Promotion Program



## Basic Policies

The MCC Group promotes compliance through the formulation of Mitsubishi Chemical Group Compliance Promotion Regulations and compliance-related regulations, which are based on rules shared with the Mitsubishi Chemical Holdings (MCHC) Group, including MCHC Group Corporate Ethics, the MCHC Group Compliance Code of Conduct, and the MCHC Group Compliance Promotion Regulations.

To firmly root compliance in all corporate activities, we formulated a detailed Code of Conduct specifically for R&D and Purchasing Units, which are tailored to their operating characteristics (P40).

## Promotion System

The MCC Chief Compliance Officer (CCO) is appointed by the Board of Directors. The CCO has the authority to direct and oversee compliance in individual departments of MCC and each of its Group companies. In addition to chairing the Compliance Promotion Committee, the CCO reports and explains general issues regarding MCC Group compliance internally/externally and to the Board of Directors.

The Compliance Promotion Committee deliberates basic policies regarding the establishment, operation and operational status of the MCC Group Compliance Promotion Program. It also makes suggestions and advises the CCO as necessary. In addition, the Committee nominates and appoints a person

from each department who is responsible for daily compliance promotion, a compliance promotion leader, and a person in charge of detailed compliance promotion tasks, all of whose functional mission is to ensure and promote compliance within their own department and assess performance. MCC participates in Control Promotion Conferences held outside Japan by Mitsubishi Chemical Holdings (MCHC) to confirm the status of compliance promotion in overseas Group companies.

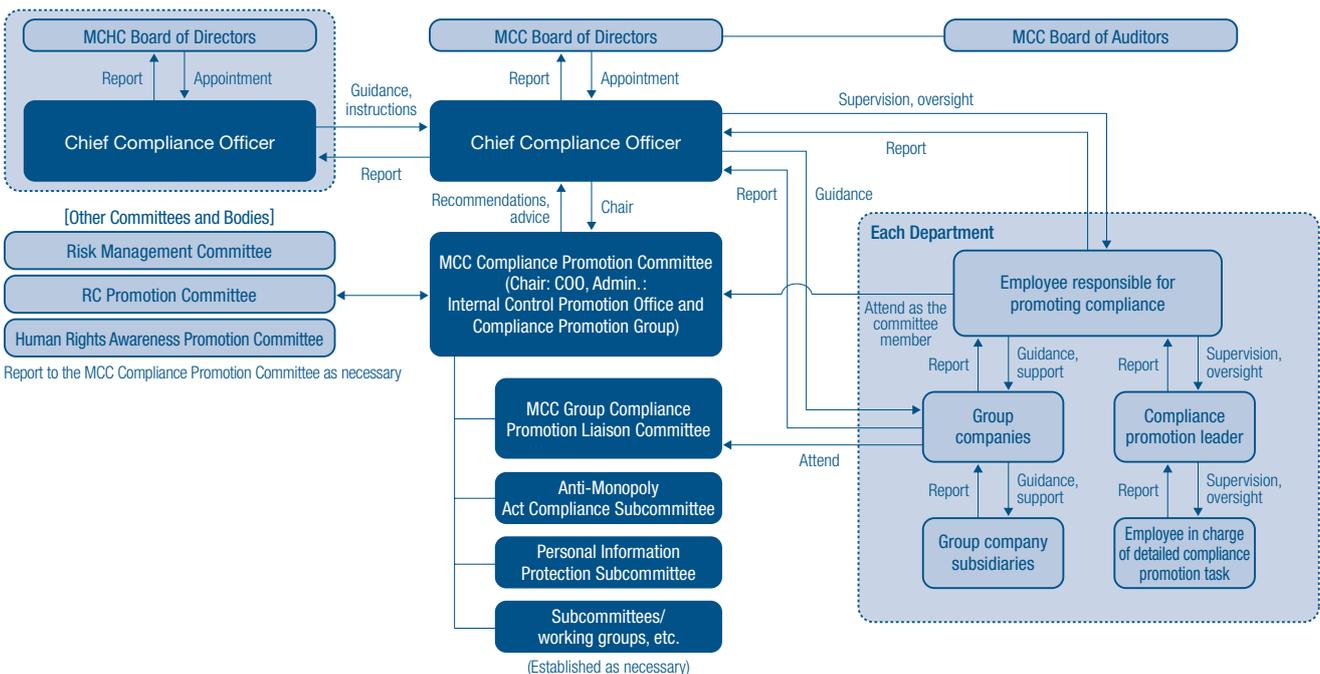
## Awareness and Education Program

Steady, ongoing training and education are essential for internal permeation of compliance. The MCC Group conducts compliance training and education each year stressing the central themes identified in the employee Compliance Awareness Survey.

In fiscal 2008, we emphasized expanded and thorough training for all employees through initiatives to educate all 30,000 members of the workplace. We also conducted training for those responsible for compliance promotion in each department and all Group companies (9 sessions, 285 participants), job-level-based training for new employees and those recently promoted to management (500 participants) and self-training for all employees via e-learning (implemented twice for approximately 25,000 employees).

In fiscal 2009, we plan to continue workplace compliance training to further enhance the compliance awareness of all Group employees, reform the awareness of group managers and section chiefs and improve worksite professional skills.

### Compliance Promotion System



## Auditing and Monitoring

The MCC Audit Office conducts a Control Self Assessment (CSA) of each MCC department, plant, branch office and Group company every year, questioning the status of compliance observation to ascertain the status of compliance promotion at each production site.

In addition, to confirm the condition of the internal compliance environment, employee compliance awareness and opinions and the status of compliance awareness permeation, a Compliance Awareness Survey has been conducted annually at MCC and domestic group companies since fiscal 2006. With approximately 80% of employees participating in the survey each year, we have confirmed the increase of compliance awareness within the group from year to year. We plan to expand the survey to include overseas Group companies.

## Consultation and Reporting

In fiscal 2002, the MCC Group introduced a compliance hotline for receiving questions or reports regarding compliance-related matters. Callers to this hotline are connected to either the head of the Internal Control Promotion Office or an outside attorney. The MCC Group is working to further the proper operation and awareness of this hotline.

Those using the hotline are guaranteed confidentiality, privacy, protection of human rights, and immunity from being

disadvantaged in any way. Information received through the hotline is investigated by a team led by the head of the Internal Control Promotion Office. If a problem is found to exist, timely remedial action will be taken and verified under the direction of the CCO.

As a result of our efforts to propagate the hotline system and establish the thorough protection of users, the number of cases reported is increasing each year. In addition, we are engaged in initiatives to create an easy-to-use environment, including toll free dialing and regular follow-ups to ensure user privacy has been maintained after initial reporting.

## Response to Violators

In the unlikely event that a compliance violation was to occur, in addition to a swift and appropriate response to correct the situation, we will conduct an investigation into the cause of the violation and make every effort to prevent recurrence. If necessary, employees who commit violations will be reprimanded in accordance with the employee work regulations and related rules of the MCC Group company to which they belong. In addition, the COO, upon consideration of the nature of compliance violation, may disclose the facts and details of the punishment resulting from the violation to MCC Group employees with appropriate protection for the privacy and human rights of the punished individuals if considered necessary from the perspective of preventing recurrence.

## HIGHLIGHT

### Formulation of Compliance Regulations for Each Operating Unit

To firmly root compliance in all corporate activities, MCC formulates detailed Code of Conduct in response to operating characteristics, prescribing specific priority areas and devising ways to heighten employee recognition and awareness.

For example, we created a Researcher Code of Conduct for R&D sites in November 2006. Also, to build and maintain appropriate relationships with business partners, we established a Purchasing Unit Compliance Code of Conduct in June 2008 for employees involved in purchasing activities.

Furthermore, as Purchasing Units are involved in ordering construction work as well as purchasing goods, we explain the content of our Purchasing Unit Compliance Code of Conduct at each plant to affiliate companies who will become our partners. We strive to deepen compliance awareness together with our business partners.

### Creation and Issuance of English and Chinese Language Compliance Guidebooks

In light of our support of the 10 principles of the UN Global Compact (P15) and the social trend toward promoting a work life balance, in November 2007 the MCHC Group added the elimination of forced labor and the abolition of child labor, together with the description of our ideas on work-life balance, to the MCHC Group Compliance Code of Conduct.

To reflect these revisions, the MCC Group created Compliance Guidebooks and issued them to all employees. At the same time, we also created and issued English and Chinese language guidebooks, which were issued to employees in overseas Group companies. We also attempt to instill Corporate Ethics and the Compliance Code of Conduct through training and other activities.

# Risk Management

## Basic Ideas

Although the Mitsubishi Chemical Corporation (MCC) Group is engaged in preventing exposure to compliance-related risks through the implementation of its compliance program, a number of other risks exist in society, including large-scale natural disasters and terrorism.

The Mitsubishi Chemical Corporation (MCC) Group implemented the MCC Risk Management Policy in May 2006. The purpose of these provisions is to prevent major risks to Group business activities and minimize damage in the eventuality that such risks materialize.

## Risk Management Systems

MCC's risk management system places the president at the top of the risk management structure, as the Chief Risk Management Officer. The Chief Risk Management Officer strives to ensure the appropriate and smooth operation and management of the Mitsubishi Chemical Group risk management system, which was created to enhance the corporate value of the entire Group. In addition, executive officers supervising their own departments or Group companies in such areas as research, production, operations and technology provide support as executives responsible for unit risk management. They provide direction and support of risk management system operation and preparation for their own departments, as well as Group companies.

Furthermore, the Risk Management Committee, which meets regularly, was established to assist the president as the Chief Risk Management Officer. The Risk Management Committee, comprising the Chief Risk Management Officer and executives responsible for unit risk management, and deliberates important matters pertaining to MCC Group risk management.

In fiscal 2008, the Risk Management Committee confirmed areas of risk that might significantly affect the Group and discussed the necessary Group responses to social risks that might affect the MCC Group.

## Identification of Major Risk

MCC's divisions and departments, and Group companies identify and assess the risks they are facing once a year. Risks are identified and assessed in three categories — external risks from sources like natural disasters, market trends, and the legal and regulatory environment; business process risks from sources like production, financing, and marketing activities; internal risks from sources like governance and human resource factors.

In assessing these risks, a matrix is prepared with horizontal scales for financial losses, human losses, losses of public trust, etc., and vertical scales for frequency of occurrence. Risks are then mapped on this matrix and those judged to be major are reported to the Risk Management Committee and the MCHC Group's CSR Committee meetings.

## Response to the Business Response Plan

As large-scale natural disasters and other calamities are continuously happening, Business Continuity Plans (BCPs) have gained attention as important tools for continuing or quickly restoring operations, and minimizing negative impacts on customers and business partners in the aftermath of a natural disaster, accident, or other calamity.

The MCC Group began formulating its 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 MCC Group's requirements for BCP preparation.

Looking ahead, MCC will formulate BCPs corresponding to a wider range of risks, including responses to earthquakes in the Tokyo metropolitan area and a new type of influenza pandemic.

# Human Resource Management

We will respect individual human rights and character. We will abstain from any conduct that undermines individual dignity, such as discrimination against others on the basis of race, ethnicity, national origin, religion, gender, disability, disease and social status; we will also avoid language and behavior that offends others, such as sexual harassment.

We will also adhere to internationally recognized norms, eschew forced labor in all of its forms, and support the effective abolition of child labor.

We will strive to create a motivational workplace that provides job satisfaction to constituent members, by respecting unique and diverse individuality, creating a free and energizing workplace where individuals are given a chance to manifest their best qualities, and fostering mutual trust amongst constituent members through fair and equitable personnel treatment.

## Disabled Employment Ratio (Mitsubishi Chemical)



## MCC Work/Life Balance Policies

All achievements are based on MCC employees (10,372 members as of March 31, 2009)

### Childbirth/Childcare

System	Details	Fiscal 2008 Performance
Childcare Leave System	Can be taken through the end of the first month of March following the child's third birthday. Can be taken multiple times. Can be taken even with a stay-at-home spouse. Childcare leave financial support (1/2 of bonus payment, when absent for entire bonus period).	96 Women (95.9%) 7 Men (1.7%)
Reduced Working Hours for Childcare Purposes System	Up to 2 hours per day. Can be taken through the end (March 31) of the child's third year of primary school. Can be taken even with a stay-at-home spouse. Can involve starting work earlier, ending work later, or a combination of the two.	171 Women 2 Men
Fertility Treatment Support Policy	Reimbursement for half of fertility treatment (advanced reproductive medicine) costs, up to ¥500,000 per year, for either the employee or the employee's spouse. Days off for fertility treatment. Ability to use expired annual vacation for fertility treatment.	

### Nursing Care

System	Details	Fiscal 2008 Performance
Nursing Care Leave System	A cumulative total of 1 year of leave to care for a particular person suffering a particular condition. Nursing care financial support (1/2 of bonus payment, when absent for entire bonus period).	4 Employees
Nursing Care Short Break System	Up to 2 hours per day. No restrictions on eligibility period (Period approved by the company). Can involve starting work earlier, ending work later, or a combination of the two.	5 Employees
Nursing Care Financial Support	Assistance to help cope with the mental and physical burdens of caring for elderly relatives. ¥200,000 is paid to employees caring for a first-degree relative (whether dependents or simply living together) with a care requirement rating of 4 or higher.	38 Employees

## Work-hour Reduction

System	Details	Fiscal 2008 Performance
Annual Paid Vacation	Up to 22 days depending on years of continuous service.	78.5% of general employees 46.4% of executives
Life Support Days Off	To promote the taking of continuous days off, this system provides 1 additional paid day off (3 days for workers turning 30, 35, 40, 45, or 55) when an employee takes 2 or more consecutive days off (1 award per year).	73.1% of general employees 37.8% of executives

## Intellectual Property Management

We will endeavor to develop innovative technologies, products and services, and obtain intellectual property rights and commercialize them. In this process, we shall not infringe upon the intellectual property owned by other parties, including patents, utility models, designs, trademarks and copyrights. MCC engages in initiatives to avoid infringement of third-party intellectual property while legally protecting MCC's intellectual property.

## Procurement Management

Based on the basic understanding that all business partners and vendors are our partners in conducting business, we will endeavor to foster mutual trust through fair and equitable transactions.

### 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 supplier to comply with the following items, as well as with respective laws, regulations and social standards, both at home and abroad.

- (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

**Note :** A full-text version is available on our website

## RC Promotion

### Basic Ideas on Responsible Care (RC) Activities

Providing stable product supplies, ensuring those products are of high quality and safe, providing safe and healthy work environments, and promoting operations with low environmental loads are important social responsibilities for a chemical company group that has facilities throughout the world, and provides a wide range of materials, products, and systems to a broad array of industries.

The Mitsubishi Chemical Corporation (MCC) Group was one of the initial participants in the Japan Responsible Care Council (JRCC), which was founded in 1995 to promote RC activities — voluntary chemical industry initiatives aimed at improving environmental, health, and safety conditions. While promoting dialog, inside and outside the company, in five key areas — environmental conservation, process safety and disaster prevention, occupational safety and health, quality assurance and chemical/product safety — the MCC Group is striving to enhance its trust-based relationship with society and contribute to the building of a sustainable society.

#### MCC Group — RC Promotion Policy

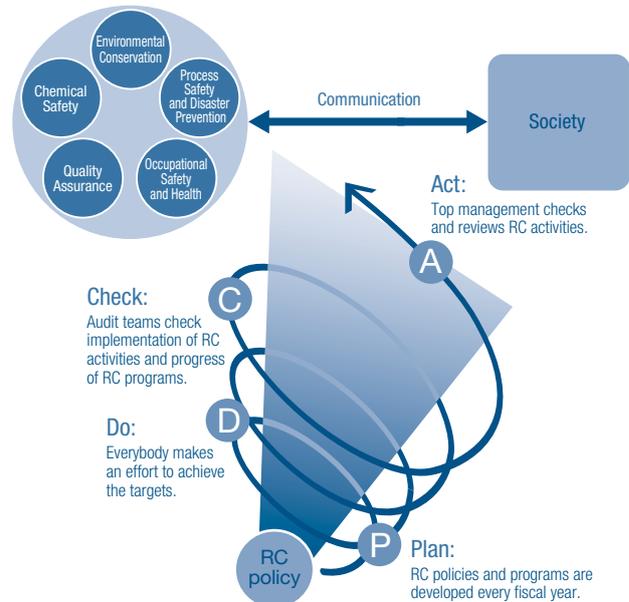
1. The environment and safety are core focuses of our business activities.
2. We are committed to customer confidence and quality assurance.
3. Our targets for accidents and workplace injuries are zero.
4. We will work to minimize waste and chemical emissions.
5. We will work to conserve resources and energy.
6. We will develop technologies and products that contribute to the environment and safety.
7. We will work to enhance our public reputation.

### RC Activity Promotion Organization

The MCC Group RC Promotion Committee meets once a year. Chaired by MCC's President, the conference is attended by executives in charge of research, production, business operations, and common departments, and is used to discuss and make decisions on RC activity plans for the entire Group, and check the progress of the RC activity PDCA (Plan-Do-Check-Act) cycle.

Working from policies and plans established at the conference, MCC's various departments and group companies formulate action plans tailored to the substance, type, and specifics of their business activities, and implement RC activities.

#### The Five Core Components of the MCC Group's RC Activities



#### MCC's RC Activity Promotion Organization

The Mitsubishi Chemical Corporation (MCC) RC Promotion Committee, which is chaired by the executive in charge of RC and attended by the heads of production cover research, marketing, business operation, and common units, is held once a year. At this gathering, results for the fiscal year and overall plans for the coming fiscal year are discussed and approved based on the Group's RC policy.

#### Group Company RC Activity Promotion Organization

Like MCC, individual Group companies have introduced systems aimed at efficiently promoting RC activities in ways consistent with their business operations, and are pursuing RC activities. MCC conducts regular audits to check the status of Group company activities and provides guidance.

#### MCC Group Companies Implementing RC Activities

○.....Mitsubishi Chemical Corporation (MCC) subsidiary subject to the Japanese Companies Act Group performance data collected and published in this CSR Report  
 ○.....MCC Subsidiary subject to the Japanese Corporate Law (Overseas): Excluded from Group performance data collected for this CSR Report  
 No symbol.....Excluded from Group performance data collected for this CSR Report

##### Performance Products

- Japan Epoxy Resins Co., Ltd.
- Shinryo Corporation
- Nippon Kasei Chemical Company Limited
- Frontier Carbon Corporation
- Mitsubishi Chemical Analytech
- Calgon Mitsubishi Chemical Corporation
- Mitsubishi-Kagaku Foods Corporation
- Yuka Denshi Company Limited
- Tai Young Chemical Co., Ltd.
- Tai Young High Tech Co., Ltd.
- Mitsubishi Kagaku Imaging Corporation
- Mitsubishi Chemical Infonics Pte Ltd.
- RESINDION S.R.L.

##### Health Care

- API Corporation
- Mitsubishi Chemical Medience Corporation

##### Chemicals

- V-Tech Corporation
- Echizen Polymer Co., Ltd.
- Kashima-Kita Electric Power Corporation
- KASHIMA Power Corporation
- KAWASAKI KASEI CHEMICALS LTD.
- THE KANSAI COKE AND CHEMICALS CO., LTD.
- San-Dia Polymers, Ltd.
- J-PLUS Co., Ltd.
- Dia-Nitrix Co., Ltd.

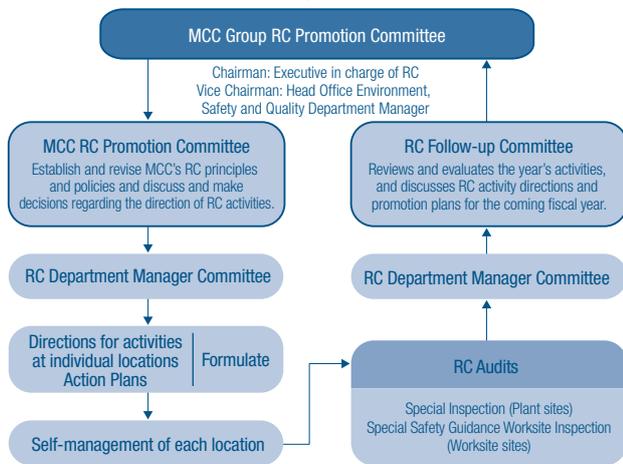
- Chuo Rika Kogyo Corporation
- TM AIR CO., LTD.
- Nippon Ester Co., Ltd.
- The Nippon Synthetic Chemical Industry Co., Ltd.
- Japan Polychem Corporation
- Japan Unipet Co., Ltd.
- Mitsubishi Engineering-Plastics Corporation
- YUPO CORPORATION
- Yokkaichi Chemical Co., Ltd.
- Sam Nam Petrochemical Co., Ltd.
- Sam Yang Kasei Co., Ltd.
- Ningbo Mitsubishi Chemical Co., Ltd.
- Beijing Ju-Ling-Yan Plastic Company Limited
- PT. Mitsubishi Chemical Indonesia

- Mitsubishi Chemical Performance Polymers, Inc.
- MCC PTA India Corp. Private Limited
- MCC Advanced Polymer Ningbo., Ltd.

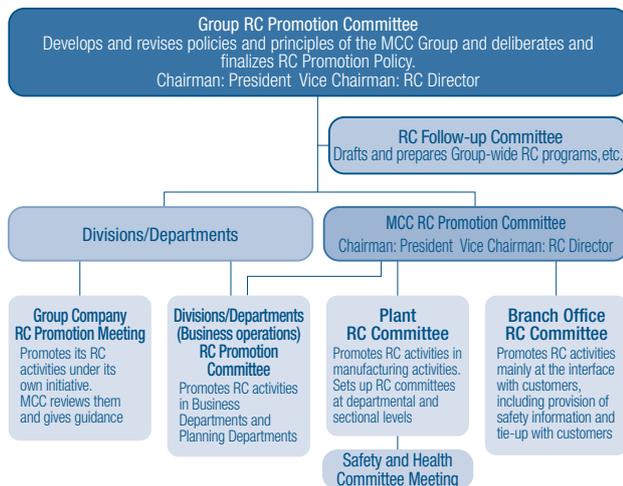
##### Others

- Mitsubishi Chemical Engineering Corporation
- Mitsubishi Chemical Group Science and Technology Research Center, Inc.
- Mitsubishi Chemical High-Technica Co., Ltd.
- Mitsubishi Chemical Logistics Corporation
- RHOMBIC CORPORATION
- Mitsubishi Chemical America Inc.

## MCC's RC Promotion Organization



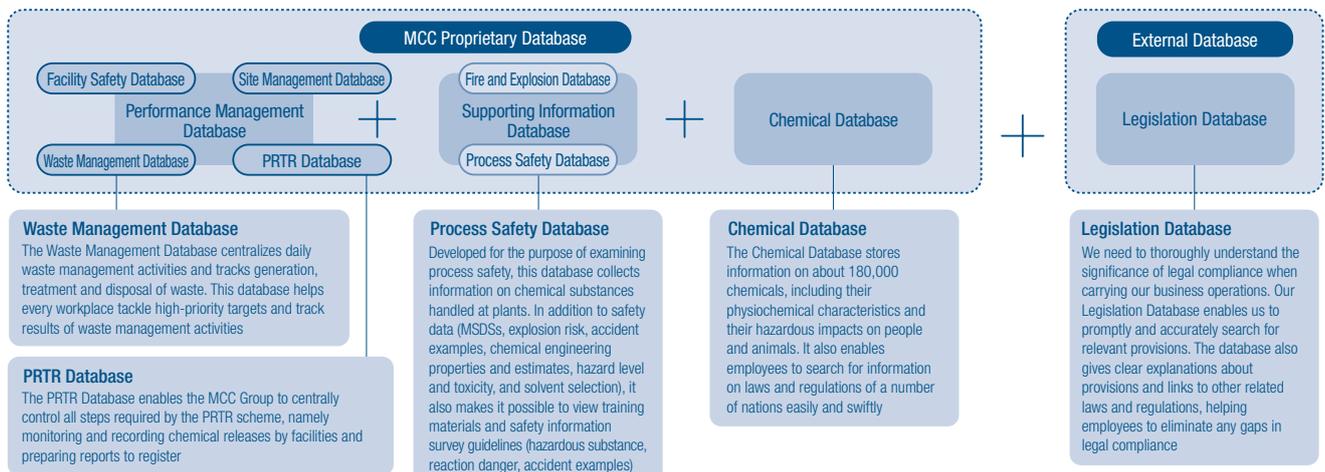
## RC Promotion Organization of the MCC Group



## Database on Environmental Conservation, and Safety and Security

MCC has created the Environmental Protection and Safety Database to support RC activities. Use of this database for

## Environment, Facility Safety Database



various purposes, ranging from product development to production, facilitate the sharing and management of RC information.

## RC Audits

MCC conducts RC Audits of production, research, and marketing facilities, and business operation units. However, after the Kashima Plant accident at the end of 2007, the RC Audit system and methods were revised for application at production sites in fiscal 2007.

In fiscal 2008, RC Audits at production sites and research facilities were conducted with a particular emphasis on frontline worksite audits. In light of the Kashima Plant fire and other past accidents, the application status of safety measures was confirmed and guidance on necessary improvements was provided in an attempt to improve RC performance.

## Quality Assurance

### To Further Improve Quality

In pursuit of its duty as a chemical company providing a broad array of products to customers in a wide range of industries, Mitsubishi Chemical Corporation (MCC) strives to prevent quality and product liability problems, and seeks to increase customer satisfaction through the delivery of safe, secure products.

MCC gained the ISO 9001 international quality management system certification for all of its production sites by 1996. It also began collecting customer feedback on raw materials and products, the quality of packaging materials, and product quality on a companywide basis in 1997, and has been developing a management system for rapidly delivering and applying this information. Using this information and knowledge as a foundation, and occasionally as a lesson, we will make an effort to further improve product quality.

### Green Information Management System

As demonstrated by the EU's ELV Directive<sup>1</sup>, RoHS Directive<sup>2</sup>, and REACH regulations<sup>3</sup>, demands that chemical substances contained in products be properly managed on a product-by-product basis and at every stage of the product life cycle, and that information be disclosed are growing on a global basis.

To properly comply with these directives and regulations, Mitsubishi Chemical Corporation (MCC) began operation of its Green Information Management System in fiscal 2006. The purpose of this system is to efficiently manage and communicate, on a product-by-product basis, information on chemical substances that require special management. MCC is now advancing the fusion of the Green Information Management System with MSDSplus<sup>4</sup> to communicate information on chemical substances contained in products in preparation for compliance with the Joint Article Management Promotion-consortium (movement aimed at communicating information on chemical substances included in products through the supply chain), which various Japanese industry sectors have been cooperating to promote in recent years.

**1 ELV Directive:** The EU's "End of Life Vehicles," or ELV, Directive limits the use of certain hazardous substances in automobiles and promotes the smooth recycling of vehicles that are no longer needed. It prohibits the use of heavy metals (lead, cadmium, mercury, and hexavalent chrome), except for those for which there are no practical substitution technologies, in new vehicles registered on or after July 1, 2003.

**2 RoHS Directive:** The EU's "Restriction of the use of certain Hazardous Substances in electrical and electronic equipment," or RoHS, Directive, prohibits the use of certain substances in electrical and electronic equipment sold in the EU, and requires manufacturers to eliminate the use of heavy metals (lead, cadmium, mercury, and hexavalent chrome) and certain aromatic flame retardants (PBB and PBDE). The RoHS Directive took effect in July 2006.

**3 REACH:** Refer to P28

**4 MSDSplus:** Refer to P28

### Environmental Management

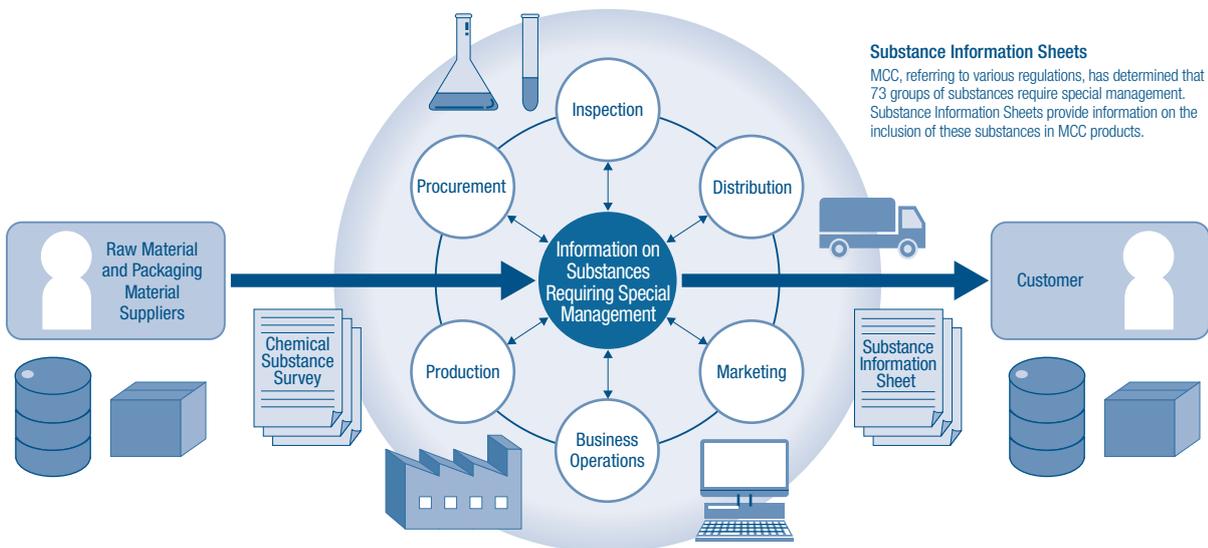
MCC is aggressively engaged in initiatives to protect the global environment, promote resource and energy conservation, waste reduction, and the reuse and recycling of resources, while developing technologies to preserve the environment and reduce the environmental impact of all processes within its business activities. Not only are we engaged in the development of environmentally friendly products and services and the prevention of atmospheric, water and soil contamination resulting from our business activities, we are also aggressively engaged in global warming and resource depletion countermeasures (P11), the preservation of biodiversity and other initiatives for global environmental problems.

#### Biodiversity Preservation

Biodiversity preservation at every level, from diverse ecosystems such as the ocean, forests and wetlands, to diverse species ranging from flora and fauna to microbes and genetic diversity, is important to protect and nurture the bounty brought forth from living things.

The MCC Group has a history of conducting ecological surveys and engaging in other forms of protection of the flora and fauna in our plants. We will redouble our efforts to be mindful of biodiversity preservation in all our business activities.

### Green Information Management System

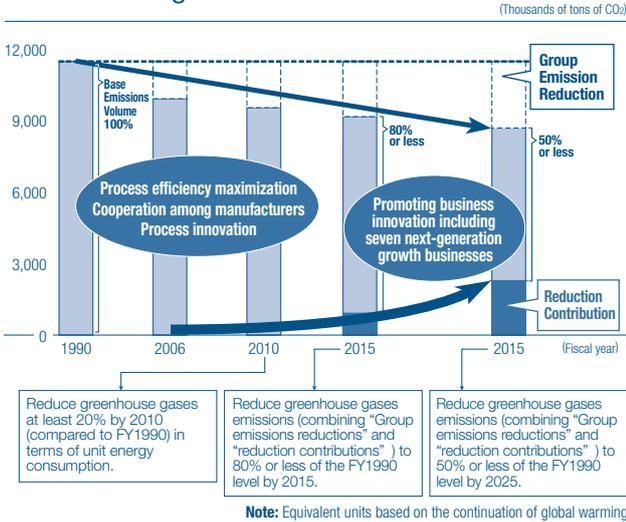


#### Substance Information Sheets

MCC, referring to various regulations, has determined that 73 groups of substances require special management. Substance Information Sheets provide information on the inclusion of these substances in MCC products.

## Preventing Global Warming

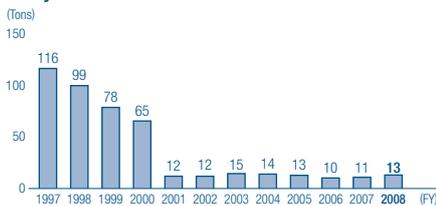
### MCHC Group Greenhouse Gas (CO<sub>2</sub> Conversion) Reduction Targets



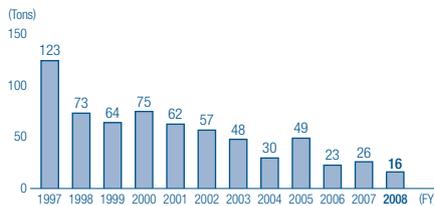
### 5 Greenhouse Gas<sup>1</sup> Emissions (MCC Group)



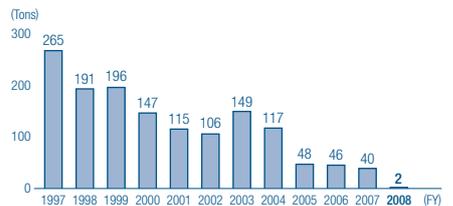
### Acrylonitrile



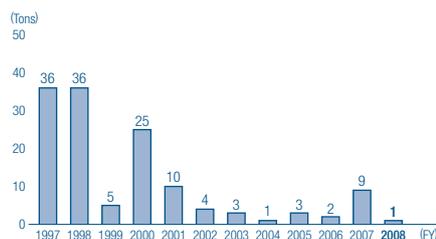
### PVC Monomer



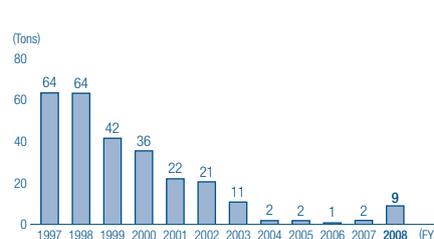
### Dichloromethane



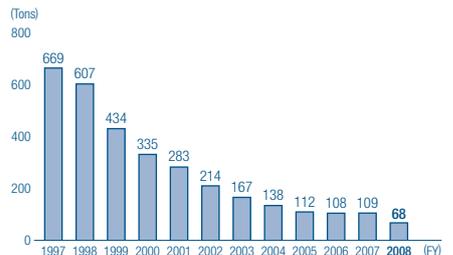
### 1,2-Dichloroethane



### 1,3-Butadiene



### Benzene



### Chemicals Covered by Voluntary Control Systems on the Basis of the Air Pollution Control Law

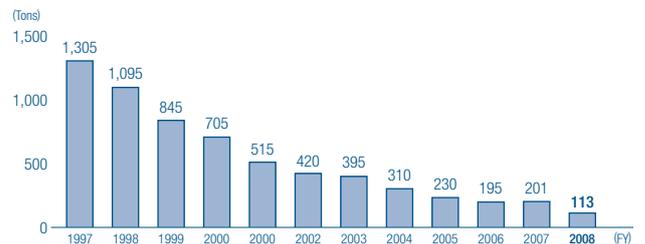
Acrylonitrile, PVC monomer, dichloromethane, 1, 2-dichloroethane, tetrachloroethylene, trichloroethylene, 1,3-butadiene, benzene, formaldehyde, acetaldehyde, chloroform and nickel compounds

## Total Chemical Substance Emission Reductions

### Details of 19 substances for which emissions are over 10 tons per year

PRTR No.	Chemical substance	Location of discharge			Total release	Amount of chemicals transferred
		Air	Water	Land		
	C4-C8 Hydrocarbon	514	0	0	514	117
299	Benzene	68	0	0	68	9
	Methyl alcohol	59	8	0	67	494
	Acetone	60	0	0	60	148
	Cyclohexane	51	0	0	51	7
177	Styrene	51	0	0	51	72
	Phosphorous and its compounds	5	45	0	50	68
	Tetrahydrofuran	43	0	0	43	14
227	Toluene	38	0	0	38	151
	Butyl alcohol	36	0	0	36	0
288	Bromomethane	31	0	0	31	0
	Ammonia	25	0	0	25	0
304	Boron and its compounds	0	24	0	24	0
63	Xylene	18	1	0	19	4
77	Chloroethylene	15	1	0	16	0
	Butyl aldehyde	14	0	0	14	0
7	Acrylonitrile	13	0	0	13	0
	Hexane	11	0	0	11	59
	Creosotes	10	0	0	10	0
	Total of emissions over 10 tons/year	1,063	79	0	1,142	1,144
	Total of PRTR-designated substances	1,131	94	0	1,225	3,046

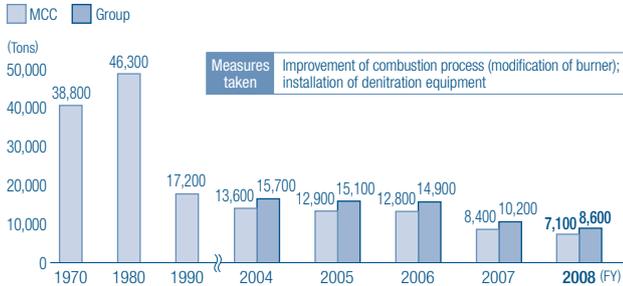
### Total Emissions of Substances Covered by Voluntary Control Systems (MCC)



Initiatives Aimed at Preventing Atmospheric, Water, and Soil Pollution

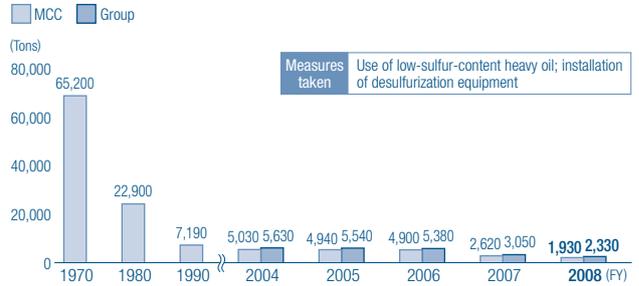
NOx (Nitrogen Oxides)

A cause of photochemical smog



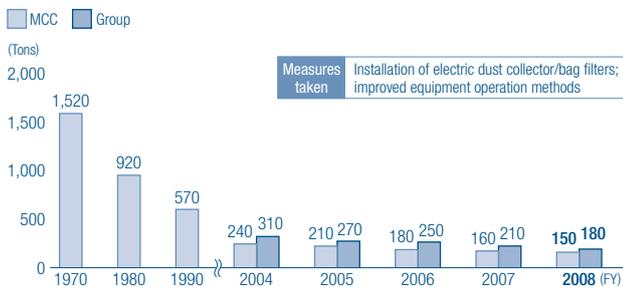
SOx (Sulfur Oxides)

A cause of acid rain as well as of respiratory diseases such as bronchitis and asthma



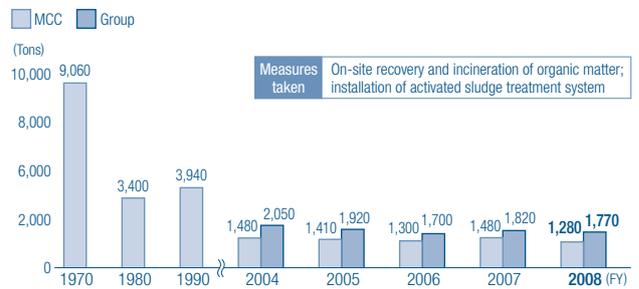
Particulates

Air-borne particulates emitted through combustion and heating in electric furnaces



COD (Chemical Oxygen Demand)

A numerical value to represent the amount of oxygen required to chemically decompose organic matter dissolved in water. COD gets higher as organic matter in water increases



Eco-efficiency Index (MCC)

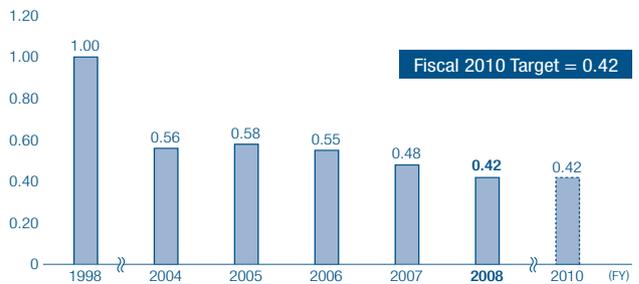
MCC comprehensively and quantitatively monitors environmental cost effectiveness by assigning weights to its environmental loads and indexing the impact of load reductions. This methodology is based on the comparative risk assessment system established by the National Institute for Environmental Studies. The integrated environmental load index, which uses fiscal 1998 as its base year, was reduced to 0.42<sup>1</sup>, which represents the achievement of our fiscal 2010 target. The integrated evaluation index for environmental management is calculated as:

$$\text{Eco-efficiency} = \text{Revenue} / \text{Environmental load}$$

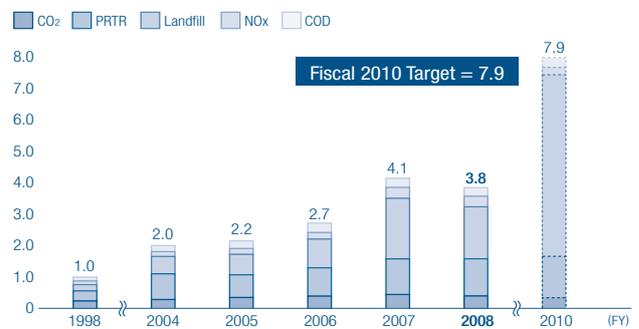
Overall eco-efficiency, based on the weights given below, was determined to be 3.8 times that of the base year. Compared to fiscal 2007, although the environmental load index improved, eco-efficiency declined due to lower net sales. It is thought that an ongoing focus on reducing landfill waste volume will be critical for achieving the fiscal 2010 target<sup>2</sup>, and efforts to increase recycling rates will be continued.

- Efforts to significantly reduce NOx emissions and the volume of waste disposed of in landfills began in fiscal 2007 and have helped to improve the environmental load index.
- Values calculated assuming the following conditions. CO<sub>2</sub>: 8.6% reduction vs. 1990. PRTR: 50% reduction vs. fiscal 2000. Landfill waste: Zero emissions. NOx, COD: Ongoing 5% annual reductions. Revenue: Fiscal 2005 level.

Integrated Environmental Load Index



Integrated Eco-efficiency



Integration coefficient (αn)	
Global atmospheric change (CO <sub>2</sub> emissions)	0.24
Global atmospheric pollution (SO <sub>x</sub> , NO <sub>x</sub> )	0.12
Organic chemicals substance pollution (PRTR emissions)	0.32
Water contamination (COD)	0.12
Massive consumption, massive waste (landfill disposal volume)	0.20

$$\text{Integrated Environmental Load Index} = \sum \alpha_n \frac{EL_n(\text{Target year})}{EL_n(\text{Base year})}$$

EL<sub>n</sub>: Individual environmental loads

$$\text{Integrated Eco-efficiency} = \sum \alpha_n \frac{EE_n(\text{Target year})}{EE_n(\text{Base year})}$$

EE<sub>n</sub>: Eco-efficiency for individual environmental loads

### Responses to Last Year's Third-party Opinion

Below is a summary of changes made for this year's CSR report, in response to opinions on the fiscal 2008 report.

Overview of Comments Regarding the CSR Report 2008	Responses by MCC
Promote cooperation and sharing of safety measure reviews and enhancement with affiliates. Take specific actions to create a framework to support the development of a foundation for EHS (environment, health, human rights, safety) in the supply chain, beginning with Group companies.	In terms of cooperation and sharing with affiliates, we address the status of the establishment of the committee to cultivate a safety culture at our Kashima Plant (P8), as well as reflect the opinions of affiliates in our practices and policies (P9). As these activities are just a beginning, we will continue their further advancement. As for the creation of a foundation for EHS in the supply chain, so far we have enhanced RC activities centered on information sharing among Group companies in Japan and overseas (P10). We are actively planning to participate in JAMP activities to communicate of information on chemical substances contained in products throughout the supply chain (P27).
Indicate how the Company intends to continue creating opportunities for dialog with stakeholders, and in particular, how to deepen dialog with important stakeholders.	To facilitate an understanding of the status of communication with the Mitsubishi Chemical Group's various stakeholders, we elaborate on our current activities (P37). We will continue these current activities while making an effort to further deepen communication.

### Third-party Opinion on the CSR Report 2009



#### Hideto Kawakita

CEO  
International Institute for Human, Organization and the Earth (IHHOE)  
International Institute for Human Organization and the Earth (IHHOE): This non-profit organization was established in 1994 to work for the democratic and harmonious development of all life on earth. Its main activity is management support for citizen groups and social workers, but it is also extensively involved in CSR support for large corporations.  
<http://blog.canpan.info/iihoe/> (Japanese only)

This opinion was written based on the content of this report and on an interview with the person in charge of CSR at Mitsubishi Chemical Corporation (MCC). Regarding its CSR initiatives, it can be said that MCC has begun to properly implement the PDCA management cycle for environmental load reduction and a wide range of other initiatives.

#### Points Deserving High Ratings

- Realized significant reduction in total chemical substance emissions (P23) through the introduction of new technologies and facilities improvements.

#### Areas Requiring Further Effort Based on Initiative Progress

- Regarding companywide safety measure reviews and enhancement (P7-10) following the Kashima Plant accident, we formulated the concept of "the way we should be," "five priority measures," and established five committees to execute these initiatives. Furthermore, the way in which the Company promotes information sharing and cooperation with affiliates was clarified. In addition, in the interest of establishing an EHS (Environment, Health, Human Rights, and Safety) foundation

within the supply chain in the medium-term (next 5 years), actions to establish a framework for evaluating specific items and their progress, sharing issues and stimulating aggressive improvements is must begin with main Group companies.

- Regarding the reduction of CO<sub>2</sub> emissions (P21-22) and overall chemical substance emissions (P23), to keep unit consumption deterioration due to significantly reduced production volumes in check, MCC needs to develop and establish process technologies that adapt to production volume fluctuation.
- 2.72% of Mitsubishi Chemical employees are enrolled in the system for taking leave or working shorter hours for child or nursing care. Going forward, we hope to promote initiatives to achieve similar levels at each Group company.

#### Points in Need of Greater Effort

- In terms of promoting waste reduction (P25), orders to dismantle facilities represents the majority of landfill disposal and MCC needs to increase the rate of waste separation and promote R&D and technology sharing, transcending industry and position to seek the understanding and shared responsibility of customers to increase the recycle rate.
- Regarding dialogs with stakeholders (see P15) cited as being a critical element of CSR promotion, I would like to see a clear description of how opportunities to deepen continued dialogs with particularly important stakeholders will be created on an ongoing basis rather than on a per-event basis.

川北秀人

mitsubishi  
chemical

