



CSR REPORT 2010

Corporate Social Responsibility Report



MITSUBISHI CHEMICAL CORPORATION

CSR REPORT 2010

▶ PDF VERSION

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Message from the Top Management

Striving for *The KAITEKI* Society

Aiming for a Sustainable Society through Good Chemistry

As a member of the Mitsubishi Chemical Holdings Group, the Mitsubishi Chemical Group upholds its parent's philosophy, "Good Chemistry for Tomorrow—Creating better relationships among people, society and our planet." This philosophy includes the idea of supporting society and the global environment through the science of chemistry, as well as chemistry in the sense of compatibility, relationships and connections among different objects, different peoples, and between people and objects. By instilling these beliefs into our corporate psyche, we aim to forge sustainable relationships with the global environment and our stakeholders.

The Mitsubishi Chemical Group is active in a host of businesses. Nevertheless, we are consistent in the decision criteria that we employ through our corporate activities. By measuring our operations on the basis of sustainability, health and comfort, we work toward our mission: contributing to the development of a sustainable society.



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

Building Strong Business Foundations for Sustainable Growth

To contribute to the sustainable development of society, first we must firm up our own foundations for sustainable business growth and ensure the unwavering trust of society. As a leading chemical manufacturer, we are doing our utmost to achieve four key objectives: to (1) provide high-quality products, technologies and services through safe and secure systems, (2) be proactive in our initiatives to realize a better global environment, (3) ensure thorough compliance and (4) cultivate human resources who support efforts to achieve these objectives.

We recognize that building safe and dependable production systems is essential to sustain corporate activities, and accordingly we are addressing this requirement on numerous fronts. Of particular note, following the fire that broke out in our Kashima Plant in 2007, we have redoubled efforts to ensure that safety is a topmost management priority, enhancing our safety management system and installing additional safety equipment. Leveraging such systems and equipment, we are fostering a pervasive safety culture in our human resource development and safety management systems.

As we believe that contributing to the global environment goes beyond simply upholding laws and regulations, we take a far-reaching and proactive approach. We consider these efforts part of our mission as a corporate citizen.

The Mitsubishi Chemical Group is working to maximize process efficiency and develop innovative processes. We are also taking the initiative in forging alliances with other companies, including those in other manufacturing sectors, with the goals of enhancing production efficiency and conserving energy. As a topmost priority, we are striving to cut the greenhouse gases emitted during our production processes. Evincing the results of the energy conservation efforts that we began in fiscal 2008, in fiscal 2009 Mitsubishi Chemical Corporation's CO₂ emissions were down by more than 30%, compared with 1990 levels.

In addition, to reduce the environmental impact of our products at when used in society and at the disposal stages, we have defined next-generation growth businesses on the basis of life-cycle analysis. We are investing aggressively and working toward the early commercialization of these businesses. Specifically, our target businesses include materials for the Lithium-ion batteries that are used in hybrid vehicles, white LED lighting, organic thin-film photovoltaic modules, sustainable resources and materials that will make vehicles more lightweight.

We believe that each of our employees is an important stakeholder in our business activities. Accordingly, we aim to create a workplace where every employee can work with pride and manifest their best qualities. We are securing and cultivating the human resources to support corporate efforts and striving to foster a workplace atmosphere that is motivating and where employees are treated fairly. We are also doing our utmost to foster a work-life balance among our employees by creating and maintaining systems that provide support for employees who are raising children or taking care of parents as well as working.

Toward *The KAITEKI* Society

By harnessing the power of chemistry, the Mitsubishi Chemical Holdings Group aims to generate innovative new products, technologies and services that will help achieve sustainability, health and comfort. Through aggressive corporate efforts in this direction, we aim to achieve *The KAITEKI* society.

To make steady steps toward *The KAITEKI* society as a core operating company in the Mitsubishi Chemical Holdings Group, we will increase our dialog with stakeholders—including attractive business partners in other industries. As a result, we hope to build symbiotic and harmonious stakeholder relationships that will prove instrumental in resolving the issues we all face and in building new corporate value.

October 2010



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

Basic CSR Concept

The Mitsubishi Chemical Group, in upholding the Mitsubishi Chemical Holdings 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 Mitsubishi Chemical Holdings Group Corporate Ethics](#), the ten principles of the UN Global Compact¹ and other such standards that we, accordingly, treat as management fundamentals. The Mitsubishi Chemical 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 Mitsubishi Chemical 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 issues faced by societies around the world.

¹ 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 Mitsubishi Chemical Group aims to strengthen its corporate governance and enhance its corporate value. We are working to achieve these objectives in several ways: by ensuring that management decision-making and operations are carried out appropriately and promptly; by clarifying management responsibilities; and by prioritizing compliance and stronger risk management.

Human Rights / Employment

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

Corporate Ethics

The Mitsubishi Chemical 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 Mitsubishi Chemical Group will continue to strive to improve public understanding of its business activities by maintaining a high standard of transparency and disclosing accurate information.

Communication with Stakeholders

	Basic Policy	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"> ▪ Marketing and sales activities ▪ Information Center ▪ Chemistry Plaza ▪ Seminars on Group technologies ▪ Trade shows ▪ Others
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"> ▪ Purchasing activities ▪ Information Center ▪ Others
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"> ▪ Management and labor committee ▪ Compliance hotline ▪ Others
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"> ▪ Meetings to exchange opinions with local communities ▪ Plant tours ▪ Participation in local events ▪ Hold events in local areas ▪ Dialogs with NPOs ▪ Others

Editorial Policy

Editorial Perspective

Mitsubishi Chemical 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 in response to increasing stakeholder concern regarding corporate social responsibility (CSR). The CSR Report was created from the development of RC Report content and a wide-ranging perspective of business activities from both economic and social viewpoints.

For fiscal 2010, we have created a special feature outlining four initiatives that the Mitsubishi Chemical Holdings Group is pursuing to attain the truly sustainable state that characterizes *The KAITEKI* society.

The report comprises three main sections: “CSR Management” section, in which we introduce the Mitsubishi Chemical Group’s management structure; the “RC Promotion” section, which introduces the five pillars of the Group’s responsible care activities—occupational safety and health, environmental conservation, quality assurance and chemical/product safety; and the “Together with Stakeholders” section, which outlines our stakeholder-oriented activities.

CSR Report

Out of consideration for the global environment and in an effort to reach a broader stakeholder base, we have discontinued the publication of a physical CSR report, making it entirely web-based from fiscal 2010. In this reporting, we will seek to leverage the characteristics of electronic media. For the convenience of stakeholders, we have formatted the CSR information as a downloadable PDF file.

[Click here to download the PDF](#)

Reporting Period

Fiscal 2009 (April 2009–March 2010)

Note: Some content refers to fiscal 2010 developments.

Report Scope

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

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*

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Disclaimer

This report includes not only facts regarding the past and present status of Mitsubishi Chemical 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.

Harnessing the Power of Chemistry to Contribute to *The KAITEKI* Society

The Mitsubishi Chemical Holdings Group has adopted three decision criteria for corporate activities: “Sustainability,” which refers to a focus on operations that contribute to resolving resource, energy and global environmental problems; “Health,” in a drive to foster a safe, secure and healthy society; and “Comfort,” which describes the realization of an easier and more agreeable society. As a core component of the Mitsubishi Chemical Holdings Group, the Mitsubishi Chemical Group is pursuing the possibilities of chemistry to attain the truly sustainable state, in which these three values in a spirit of harmony and coexistence that characterizes *The KAITEKI* society. As the Mitsubishi Chemical Group’s core competency, chemistry offers unlimited potential by enabling materials to be imbued with an array of functions and properties through control of substances at the atomic and molecular levels. Many indispensable elements in our lives—water, foodstuffs, pharmaceuticals and daily commodities—are supported by the power of chemistry. Beyond this, chemistry forms the foundation for new technologies that contribute to the realization of *The KAITEKI* society, including photovoltaic modules that convert solar energy into electricity, lithium-ion batteries for safe and intensive storage of electrical energy, and lights using white LEDs that help to create bright, comfortable space, while boosting energy conservation.



Hisao Urata
Corporate Planning
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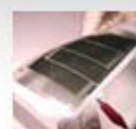
The Mitsubishi Chemical Group is focusing on various businesses that contribute to sustainability of the global environment and society to ensure that innovations in chemistry generate products that step up the pace of social innovation. Accordingly, this feature introduces products that contribute to resolving the problems of resources and energy and contribute to the construction of a safe and secure society as concrete examples of such measures.

The Power of Chemistry 1 The Sustainability of Resources and Energy

Developing carbon-neutral plastics using sustainable (non-fossil) resources



Produce, Save, Use—Energy sustainability leading to the realization of KAITEKI



The Power of Chemistry 2 Safe and Secure Sustainability

Cleaning up agricultural land and improving food safety through phytoextraction system



Developing a SEARCHGAIT sensor system that detects bodily changes without posing a physical burden



Harnessing the Power of Chemistry to Contribute to *The KAITEKI* Society

The Power of Chemistry 1 The Sustainability of Resources and Energy

Developing carbon-neutral plastics using sustainable (non-fossil) resources



Currently, most plastics are manufactured from raw materials derived from petroleum sources. However, there has been a worldwide focus on the grave environmental problems arising in association with depletion of oil resources, global warming and industrial waste processing. Plastics derived from non-fossil resources that pose no environmental pollution threat need to be developed if we are to continue to use the plastic products that have become indispensable to modern lifestyles. Accordingly, Mitsubishi Chemical promotes the development of biodegradable plastics, which are friendly to the natural environment, and carbon-neutral plastics, which use sustainable resources and thus are non-depleting and incur no environmental burden.

Expanding the Scope of Applications of Biodegradable Plastics

Mitsubishi Chemical combines its core technologies, such as biotechnology, polymer manufacturing and materials development, with its marketing capabilities to develop and market the environmentally considerate, biodegradable plastic *GS PLA*, which can be broken down into water and carbon dioxide while underground or in various other circumstances.

Biodegradability of *GS PLA*



Samples: Kraft paper and plastic thickness 20μm

Experimental conditions: Buried in leaf mold 50 degrees celcius/90%RH

GS PLA is finding growing use as biodegradable plastic films for mulching and in other agricultural applications and as disposable utensils. This contributes to savings in terms of energy and costs incurred during waste disposal. For example, dining utensils made with *GS PLA* were used in the

athletes' village during the Vancouver Winter Olympics in Canada in February 2010. Furthermore, regions that operate schemes for the composting of raw garbage have begun to use *GS Pla* bags for collection and disposal.

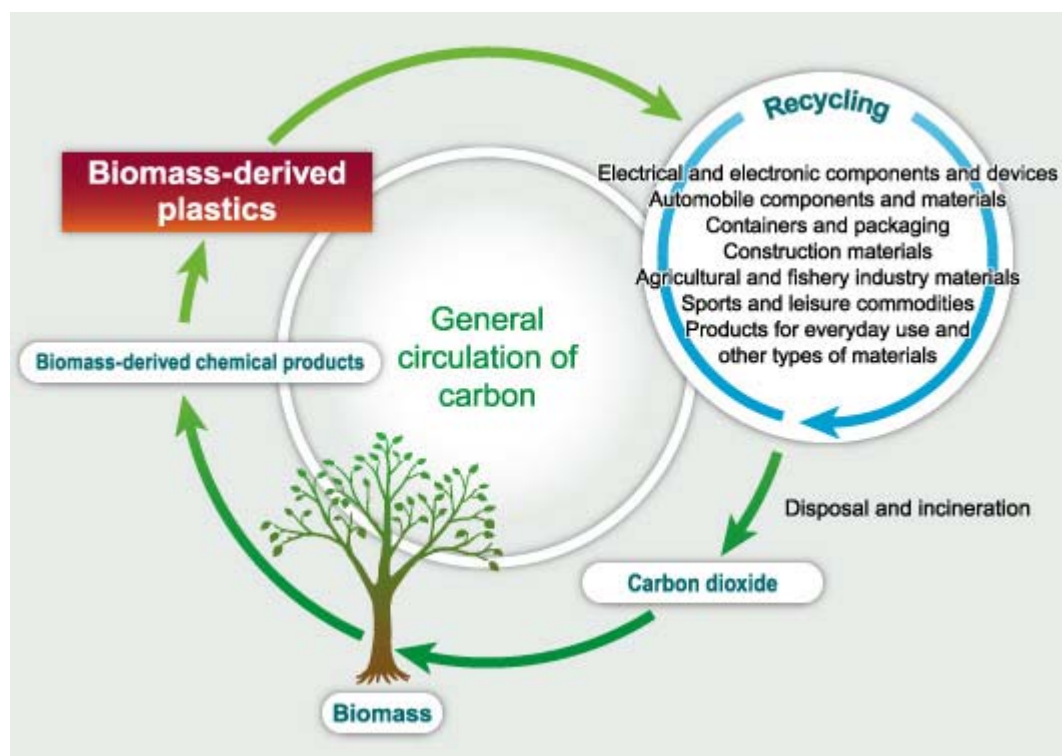
In Thailand, where the promotion of bio-resources as a next-generation technology is relatively advanced, the government, environmental protection organizations and corporations have collaborated in a scheme to use *GS Pla* garbage bags at the Samed island resort since July 2010. This initiative marks the start of a program for the composting and efficient use of waste.

Currently, succinic acid, which is a basic ingredient of *GS Pla*, is produced using oil-derived materials. However, a plan is in place to switch to plant-derived raw materials in the future.

Developing New Biomass-Derived Plastics

Mitsubishi Chemical, aiming to realize carbon-neutral plastics from sustainable resources, is engaged in the development of new biomass-derived plastics.

Aiming for a carbon-neutral, recycling-based society



One such example is a bio-based engineering plastic that features high levels of transparency and other optical characteristics, light resistance (no yellow discoloration) and surface hardness. In addition, this groundbreaking product has made significant advances from previous transparent biomass-derived plastics in terms of heat and impact resistance.

Mitsubishi Chemical is leveraging these characteristics in preparation for a wide variety of potential applications, including as cutting-edge optical and energy-related materials, as an alternative to high-performance glass, as housing materials in electronics equipment and automotive interior and exterior materials.

In August 2010, we commenced sample supply from a pilot



A bio-based engineering plastic

plant within the Kurosaki Plant. Currently, we are progressing with demonstrative operation, with plans to start production at a commercial plant in 2012.

Through the expansion of the bio-based engineering plastic market, Mitsubishi Chemical aims to step up conservation of oil resources and reductions to CO₂ emissions, and thus to contribute to the building of a low-carbon society.

Harnessing the Power of Chemistry to Contribute to *The KAITEKI* Society

The Power of Chemistry 1 The Sustainability of Resources and Energy

Produce, Save, Use— Energy sustainability leading to the realization of *KAITEKI*



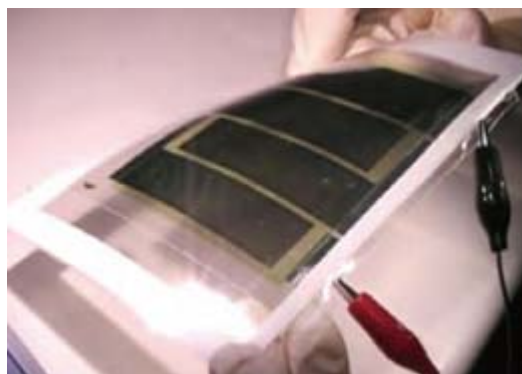
As responses to the problems of depletion of fossil resources and fuels become more urgent, Mitsubishi Chemical is utilizing its accumulated knowledge of diverse materials to promote the development and commercialization of: photovoltaic modules, which are gaining momentum as a renewable energy source; Lithium-ion battery (LIB) materials, which are indispensable for electric vehicles; and low-electrical-power-consumption LED lighting. Technologies that can produce, save and use energy in a fashion that is conducive to sustainable society are all dependent on the unlimited possibilities of chemistry.



Producing energy

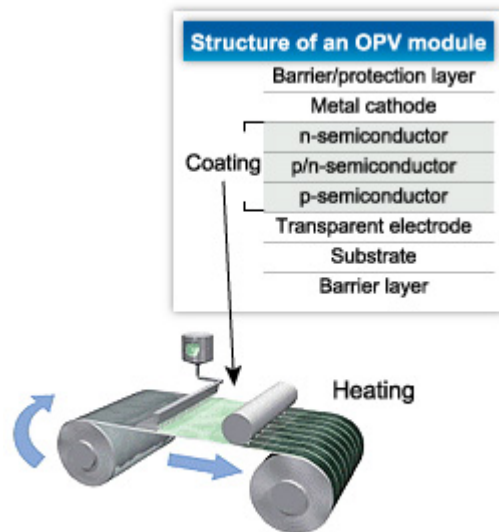
Successful Development of State-of-the-Art Photovoltaic Modules that Facilitate Mass-Production through a New Semiconductor Coating Process

A pressing need has evolved for countermeasures to the problems of global warming. The spread of photovoltaic cells—a way to harness the sun's infinite energy providing CO₂-emissions-free power source—began against this background. The scale of the photovoltaic cell market is estimated to reach 20 trillion yen by 2015. Currently, such commonly used photovoltaic module applications as household solar panels are manufactured individually, and comprise a crystalline silicon semiconductor material mounted on a substrate, principally made of glass. Because they are heavy and rigid, these modules—commonly located on residential rooftops—present a number of installation difficulties.



Mitsubishi Chemical has developed the world's first "solution-processable" organic photovoltaic (OPV) modules, which differ completely from crystalline silicon models in terms of both materials and production method. OPV module manufacture involves applying two types of printable organic semiconductor materials on a film substrate and is suitable for mass production. Furthermore, as glass is not used the thickness of the organic semiconductor layer is reduced to the nano level, which cuts the weight of the OPV modules to less than one-tenth that of crystalline silicon modules and is capable of bending.

The World's First Solution-processable OPVs



OPV—Drastically Expanding the Scope of Applications for Photovoltaic Modules

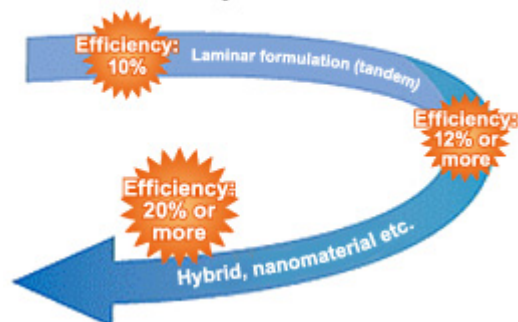
OPV brings such merits as lighter weight, thinner structure and enhanced flexibility. Its realization is anticipated to dramatically extend the range of applications for photovoltaic modules. For example, buildings had to be strong enough to support the conventional solar cell panels, which were too heavy to be used on slate-roofed factories, stations and similar buildings. The lighter weight of OPV modules enables trouble-free installation in such situations. Moreover, being thin and flexible, OPV modules can be attached to building wall surfaces and car bodies. In addition, innovative thinking opens up an array of new applications, including such agricultural uses as plastic greenhouse cultivation, industrial equipment and clothing.

Enlisting the Overall Capabilities of the Mitsubishi Chemical Holdings Group

The problems encountered in Mitsubishi Chemical's development OPV modules were overcome largely through positive promotion of internal and external tie-ups. Organic semiconductors with excellent electric characteristics and durability were developed in cooperation with universities. Furthermore, Mitsubishi Plastics and other Group companies collaborated with Mitsubishi Chemical in the development of surrounding materials, such as the film and sheet that protects the organic semiconductor, significantly raising durability through the development of airtight barrier film. Moreover, system design was conducted cooperatively with Mitsubishi Chemical Engineering. As a result of such initiatives, OPV can be considered to be the crystallization of comprehensive technologies cultivated by the Mitsubishi Chemical Holdings Group.

Milestones for High-Efficiency OPV

Further improve photovoltaic conversion efficiency



Currently, Mitsubishi Chemical is striving to raise the conversion efficiency to propel OPV toward commercialization. By boosting the current figure of 7% to a level comparable to the 12% or more achieved by crystalline silicon models, we are targeting a market launch by 2015.

■ Penetrating the Photovoltaic Module Market with Our Original Brand, *gioa*

The Mitsubishi Chemical Holdings Group is already cultivating business in anticipation of becoming a full-fledged photovoltaic module market participant. The Group has inaugurated the original *gioa* brand, established tie-ups with proven manufacturers of crystalline silicon models, commenced sales of a solar power generation system for commercial facilities and industry, and initiated marketing

activities for agricultural plant factory and other systems incorporating photovoltaic modules. In addition, we have formed an alliance with a manufacturer of amorphous silicon photovoltaic modules, which are lighter and thinner than crystalline silicon models, to build up sales performance.



Mitsubishi Chemical is securing sales channels and raising the profile of the *gioa* brand in preparation for the 2015 start-up of full OPV production. In the future, we plan to bolster the scale of our photovoltaic module business to 100 billion yen or more.



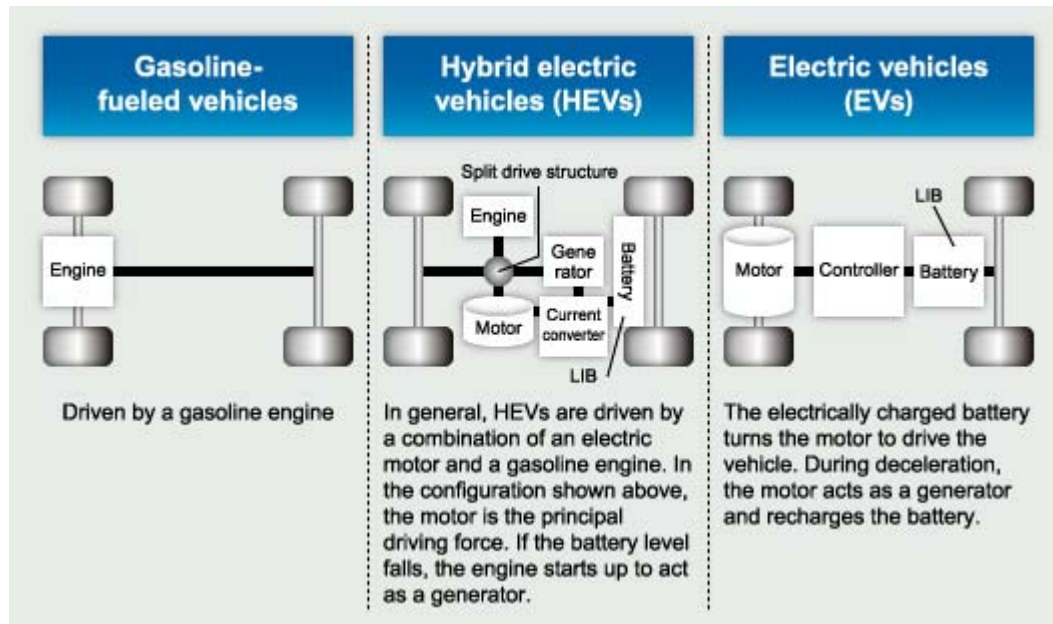
Next Generation Batteries for Eco-cars—LIB Materials

LIBs are rechargeable batteries that function through the repeated charging and discharging of lithium ions between the anode and cathode in an electrolyte. They facilitate high voltages, while being lightweight and compact, so have been widely adopted as power sources for notebook PCs, mobile phones, digital cameras and other mobile devices.

Hybrid electric vehicles (HEVs) have gained popularity in the automotive market. Formerly, these vehicles used nickel-metal hydride (Ni-MH) batteries, but in the future they are expected to be superseded by high-capacity LIBs, which are also anticipated to become the standard for electric vehicles (EVs) and other next-generation eco-car models. Furthermore, batteries for automotive applications require high levels of durability and safety, so leading world automakers and battery manufacturers have been forming a variety of alliances to boost the development of safe, enhanced-performance, high-capacity LIBs for HEV and EV applications.



Structure of Gasoline-fueled vehicles, HEV and EV

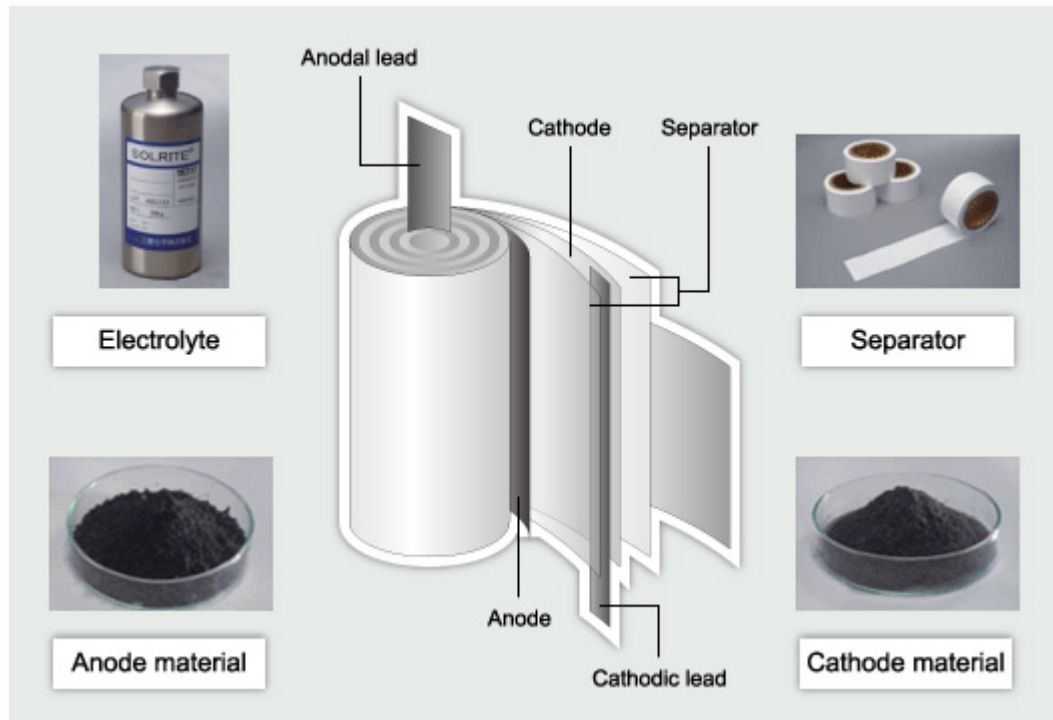


▶ The world's only supplier of all four key materials for lithium-ion batteries

The Mitsubishi Chemical Holdings Group is the only corporation to supply all four principal LIB materials: anode material, cathode material, electrolyte, and separators.

For more than 20 years, Mitsubishi Chemical has been engaged in the development and production of electrolyte and anode material. In 2005, we began commercial manufacture of cathode material. Our electrolyte, which realizes optimal performance by combining organic synthesis technologies and additives, accounts for approximately 25% of the market. We attain higher power output and capacity through stringent control of particle size and shape and other properties for the carbon particles that form the principal cathode material. Mitsubishi Chemical has also developed anode material with excellent cost performance, which is achieved by restricting the costly cobalt content, while maintaining high output. During 2009, we commercialized separators, jointly developed by Mitsubishi Plastics and Mitsubishi Chemical. The superb balance between the cycle life (the number of times that charging/discharging can be repeated), such electrical properties as low-temperature output characteristics, and the mechanical and physical characteristics of these products has attracted industrywide attention.

Structure of LIBs



Deploying the Group's Overall Capabilities to Develop Next-Generation Batteries for HEVs and EVs

The Mitsubishi Chemical Holdings Group is contributing to the development of LIBs for HEVs and EVs through such initiatives as supplying samples to battery manufacturers and automakers in Japan and overseas and providing technological solutions that combine battery materials.

The market for LIBs for HEVs and EVs is slated for high growth, reaching 100 billion yen by 2015 and rising to 650 billion yen by 2020. In the future, the Mitsubishi Chemical Holdings Group will focus on raising the performance and safety of each of its products, while establishing a stable mass-production system, in a bid to achieve the position of top supplier in this market.



Developing Phosphor for LEDs to Realize More Natural White Light

LEDs are semiconductor devices that emit light by converting electrical energy directly into optical energy. Lights using white LEDs consume less than one-eighth the electrical power and boast a useable life approximately 40 times that of incandescent bulbs of the same level of brightness. Moreover, in contrast with fluorescent lights, lights using white LEDs do not contain mercury and other hazardous substances. Accordingly, they are considered ideal candidates for next-generation eco-friendly lighting that offer energy and resource savings and other environmental conservation benefits.



Lights using white LEDs are made up from an LED chip composed of a crystal substrate and an

emitting layer, phosphors, and an encapsulant. Various colors are generated when light from the emitting layer is incident on the phosphor. In a conventional white LEDs, a blue LED chip with an emitting layer containing gallium nitride (GaN) and a crystal substrate using sapphire is combined with yellow phosphor. The resultant shade (blue emitted light + yellow fluorescence phosphor) fails to present a shade close to natural light.

In response, Mitsubishi Chemical developed a red and green phosphors for high-brightness LEDs, which it began manufacturing in 2006. Combining these phosphors with a blue LED chip realizes white light closer to natural light. This has become the mainstream model in market sectors demanding displays with a high color reproduction range, and consequently Mitsubishi Chemical maintains a substantial market share for phosphors in these areas.

Furthermore, Mitsubishi Chemical has developed technology that allows full expression of colors and shades by combining purple LED chip technology transferred from Mitsubishi Cable Industries with red/green/blue phosphors. This breakthrough has realized closer-to-natural white light in LEDs.

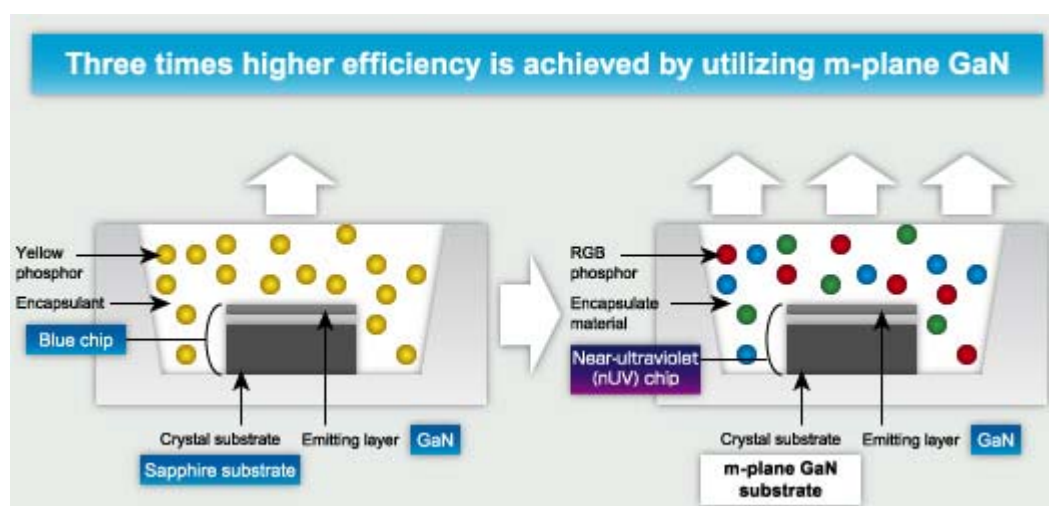
Establishing New Manufacturing Technologies in a Drive for Higher Performance

Mitsubishi Chemical has developed two technologies in its push to realize higher-performance next-generation lights using white LEDs. The first of these uses a high-intensity GaN substrate as a base for the LED chip. This arrangement is expected to result in major improvements to efficiency, compared with the currently deployed sapphire substrate. We have gained patent rights for GaN substrates from Cree, Inc., of the United States and are currently stepping up progress toward commercialization.

The second technology involves the establishment of the world's first m-plane—GaN substrate manufacturing technology. Using such substrates is expected to gain further improvements to efficiency.

In the future, Mitsubishi Chemical will continue to pursue performance upgrades for phosphors, m-plane—GaN substrates and other components, aiming to develop lights using white LEDs with triple the luminance efficiency of conventional models.

Efficiency Improvement



Developing Our Lighting Apparatus Business to Supplement LED Material Business

Advances in the intensity of LED chips necessitate encapsulate materials and other components that do not deteriorate under intense light. Mitsubishi Chemical and Mitsubishi Plastics are developing high-functionality, high-performance materials compatible with next-generation LED chips.

Mitsubishi Chemical leveraged the overall capabilities of the Mitsubishi Chemical Holdings Group in this development project, leading to the start-up of production and sales of nUV chips for lighting and white LEDs for lighting apparatus in June 2009. Beyond this, we plan to launch lighting products in the European and U.S. markets under the *Verbatim* brand during 2010.

Through the supply of high-performance, high-quality LED materials and lighting equipment, Mitsubishi Chemical is contributing to the promotion of LED lighting that features excellent environmental properties.

Harnessing the Power of Chemistry to Contribute to *The KAITEKI* Society

The Power of Chemistry 2 Safe and Secure Sustainability

Cleaning up agricultural land and improving food safety through phytoextraction system



Food safety is attracting widespread interest, while concerns are growing over the low food self-sufficiency ratio in Japan. These and other factors have made the construction of a safe, dependable food production and distribution system a major domestic issue. With Forestry and Fisheries of Japan and the independent National Institute of Agro-Environmental Sciences, Mitsubishi Chemical is striving to establish a technology called phytoextraction, which involves purification of soil, using absorption by plants, of hazardous heavy metals in soils. This technology is a focus of expectations because it offers an inexpensive, low-environmental-impact compared to the currently non-polluted soil dressing for contaminated paddy soils.

■ Contamination of Paddy Fields and Other Agricultural Land Arising from Mining Developments

Historically, the mining of metals is a well-established industry in Japan, producing many of the metal resources that have contributed to society. However, the mining of these metals has resulted in the spill-over of cadmium and other hazardous heavy metals into waterways and other natural features, leading to serious environmental contamination and health hazards.

This pollution has spread from the mines to the soil. Some paddy soils are contaminated with cadmium as a consequence of pollution from various sources, such as the fallout dust from metal refineries and irrigation with river water that has passed through mines.

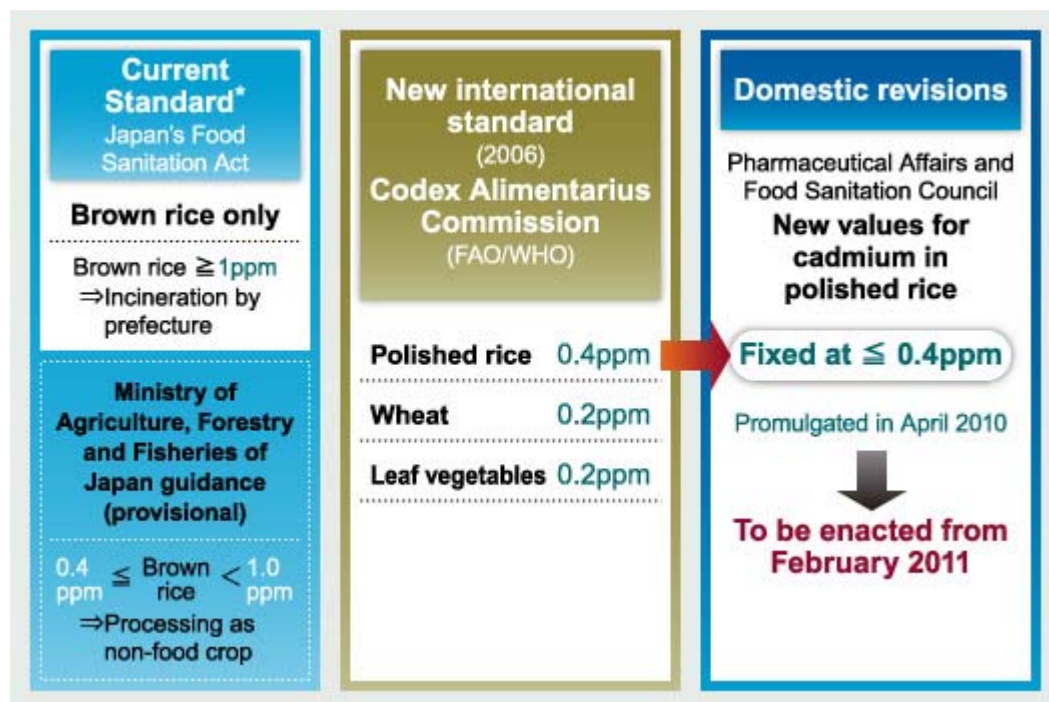
Although concentrations are sufficiently low to have no impact on health, a large number of paddy fields in Japan are believed to be contaminated with cadmium. This presents health concerns over the long term, as cadmium is absorbed into agricultural products that are then consumed by humans.

■ Urgent Need for Radical Purification of Paddy Fields to Improve Food Safety

Japan's Food Sanitation Act stipulates that the concentration of cadmium in (brown) rice should be less than 1.0 ppm. If rice produced as a food staple that meets this criterion has a cadmium content of 0.4 ppm or more, it is procured as nonfood rice, controlled and used for industrial products by the Government (currently the National Rice Wheat and Barley Improvement Association).

However, if more than a fixed amount of cadmium is ingested from foodstuffs over the long term, it presents the threat of kidney disease. Consequently, the Codex Alimentarius Commission, which was created by the Food and Agriculture Organization (FAO) and World Health Organization (WHO), specified a new international cadmium level for agricultural produce of 0.4 ppm or less in 2006.

Revisions to the Permissible Cadmium Levels in Agricultural Produce



*Current Standards: Based on the Agricultural Land Soil Pollution Prevention Law of 1971

This standard will be applicable to (polished and brown) rice in Japan from February 2011. Specifically, a cadmium concentration of 0.4 ppm or less will be a prerequisite to distribute rice as a foodstuff, regardless of whether it is earmarked as a staple food or for processing. Consequently, and in response to society's demands for safer agricultural produce, Japan currently has a pressing need to implement a radical clean-up of its paddy fields. In the future, purification measures will also be required for land bearing such crops as barley and soya beans and vegetables, which are being cultivated in a bid to raise the self-sufficiency ratio.

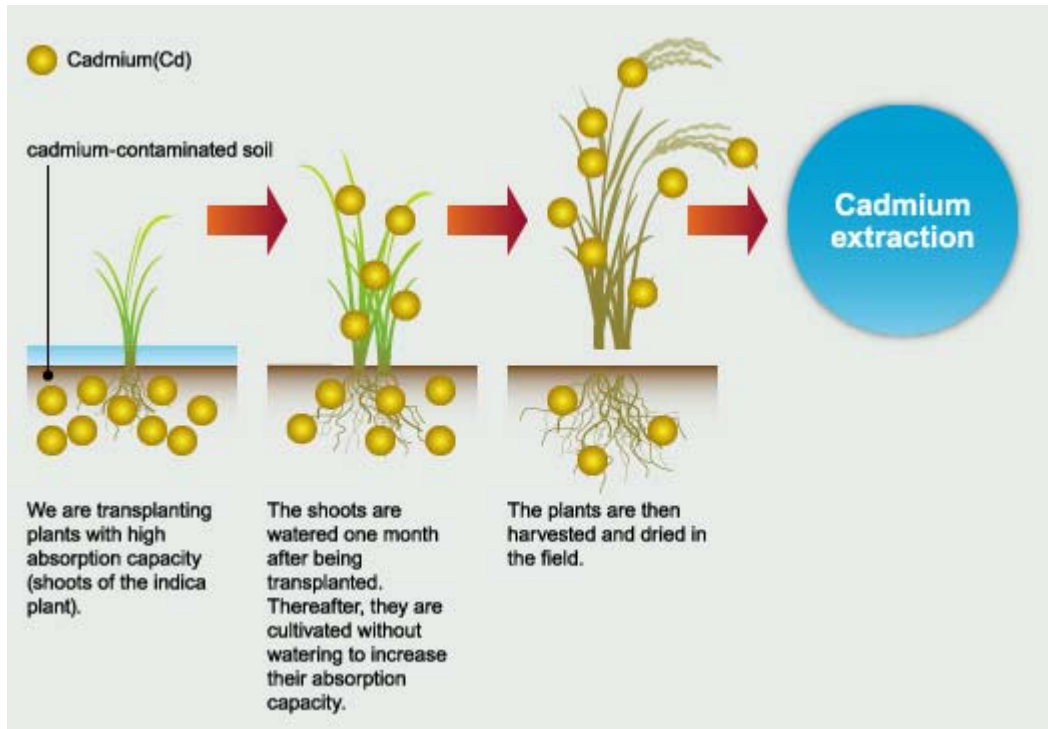
Providing Technology to Eradicate Cadmium from Agricultural Land

Technology known as phytoextraction has been identified as a key means to respond to the pressing need for purification measures for Japan's paddy fields and other agricultural land. This method cleanses the soil of heavy metals by cultivating selected plants with high absorption capacity for cadmium and other heavy metals on contaminated agricultural land. Based on Ministry of Agriculture, Forestry and Fisheries of Japan policy, trial clean-ups using phytoextraction are currently underway on agricultural land contaminated with cadmium, led by the independent National Institute of Agro-Environmental Sciences (NIAES).

Mitsubishi Chemical is participating in the project by constructing an efficient treatment system for postharvest rice plants under consignment by NIAES. Research is being undertaken in collaboration with local government research institutions and universities which will propel Mitsubishi Chemical toward its aim of establishing technologies as the only domestic enterprise with serious involvement in phytoextraction systems.

Making the Shift from Using Plants for Absorption to Effectively Using Harvested Biomass

The development of cultivation techniques to ensure optimal cadmium absorption by selected plants and technologies for the efficient processing of large volumes of harvested plants (biological resource: biomass) are vital to establish inexpensive, eco-friendly phytoextraction systems. Accordingly, Mitsubishi Chemical has forged ahead with research into biomass processing methods to treat the plants generated in phytoextraction verification tests being

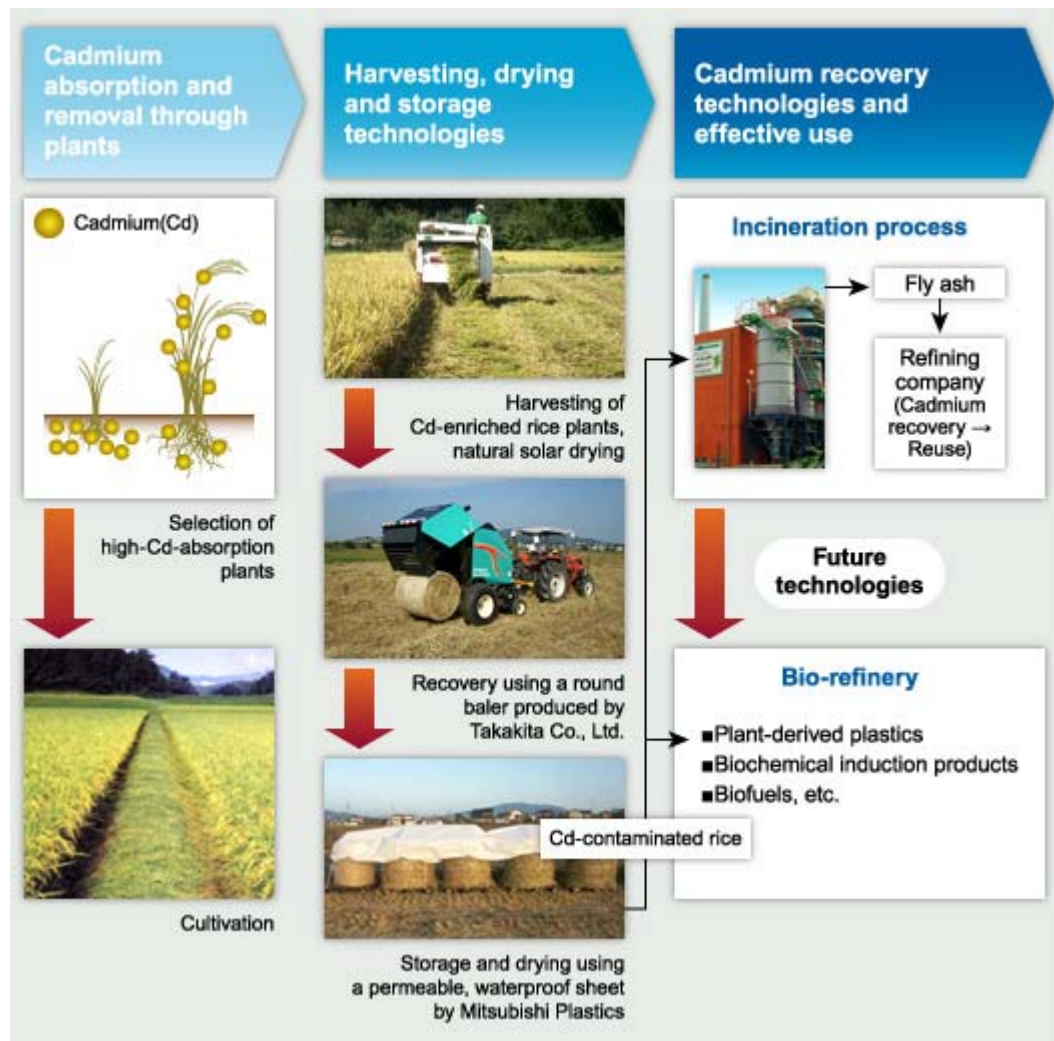


undertaken by local government bodies in various regions. As a result, we developed a technology to facilitate volume reduction by covering high-water-content biomass with a specialized permeable, waterproof sheet and drying in storage onsite at the point of harvest, which, in turn, allows for great savings in transportation and incineration costs. Through verification tests in various parts of Japan, including the Kyushu, Hokuriku and Tohoku regions, we verified that this technology produces stable results, independent of regional climatic variations.

In addition, Mitsubishi Chemical has established a technology for the efficient recovery of cadmium from fly ash generated during incineration treatment. Currently, we are researching effective use of biomass through conversion to fuel and other means in collaboration with universities. In the future, we also anticipate use for biomass in chemical induction products.

In order to enhance the safety of agricultural produce, Mitsubishi Chemical will continue to hone its technologies that target CO₂ reductions and collection of heavy metals and other hazardous substances through the cultivation of selected plants with high absorption capacity, and energy conversion technologies for harvested biomass. We believe that this makes an important contribution to the construction of a safer and more secure society.

Phytoextraction system



Stakeholder Comment



Tomohito Arao
Senior Researcher
Soil Environment Division
National Institute of Agro-
Environmental Sciences

There are several different cultivation technologies for the reduction of cadmium absorption in agricultural produce. However, technologies introduced purely for the purpose of cadmium reduction often give rise to various negative effects for farmers. In consideration of this, drastic soil purification measures are required for agricultural land where there are concerns over excessive cadmium levels.

The currently non-polluted soil dressing for cadmium-contaminated paddy soils also has various downsides. The most important factor in realizing soil purification using rice plants that is inexpensive compared with admixture is the construction of an effective processing system for the postharvest rice plants. Mitsubishi Chemical's research has established a basic technology to this end. In the future, I believe that full-blown countermeasures can be put in place once effective use of harvested plants becomes possible.

Harnessing the Power of Chemistry to Contribute to *The KAITEKI* Society

The Power of Chemistry 2 Safe and Secure Sustainability

Developing a *SEARCHGAIT* sensor system that detects bodily changes without posing a physical burden



A living environment that facilitates healthy participation in activities for as long as possible is vital to maintain and boost vitality in a society beset with declining birthrates and an aging population. Mitsubishi Chemical Corporation has developed the *SEARCHGAIT* sensor system, which detects usually unnoticed bodily changes without posing a physical burden. We are promoting this product for its role in the early detection and treatment of diseases, as well as for maintaining a healthy, contented state of body and mind.

Ascertaining State of Health by Interpreting Ambulatory Rhythms

Observing people's basic everyday actions in detail reveals much about their state of health and mind: if tired, they will tread heavily; if sick, walking becomes arrhythmic; if unable to sleep, people toss about restlessly. In short, the smallest physical and mental changes are manifest in our movements. However, it is not easy to continuously monitor a person all day in the way that a mother looks over her child, which renders it difficult to assess movements objectively.

Mitsubishi Chemical Corporation is researching detection of previously unnoticed physical changes through detailed interpretation of information that can be externally observed, with a focus on locomotor and ambulatory rhythms. This research has spawned the *SEARCHGAIT* sensor system*, which provides an analysis service for everyday actions that can make close examinations of the body's movements, predominantly those involved in walking, during the course of a day. We commenced daily action analysis services from October 2009. Observation is achieved using three back-mounted motion recorders that measure acceleration along the up/down, left/right and forward/backward axes. The subject goes about his or her regular everyday business with motion recorders attached to gain 24 hours or more of continuous recorded acceleration data. The data is interpreted by a data center that then supplies information about the subject's state of health.



The *SEARCHGAIT* sensor system leverages Mitsubishi Chemical Corporation's long years of accumulated analysis technologies, computer simulation technologies, waveform analysis technologies and data mining technologies, as well as its expertise in the health care business.

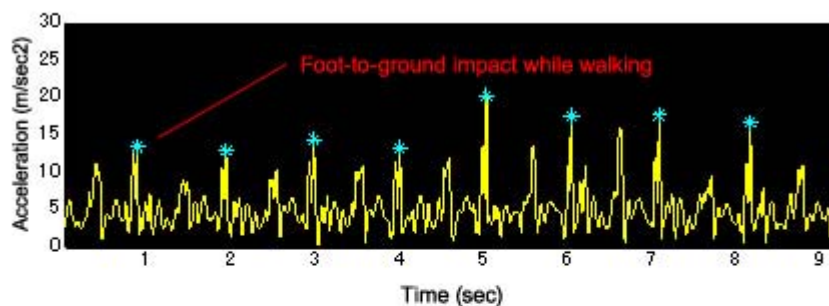
* "Gait" refers to a particular way or manner of walking.

▶ New Applications of *SEARCHGAIT* to Parkinson's Disease

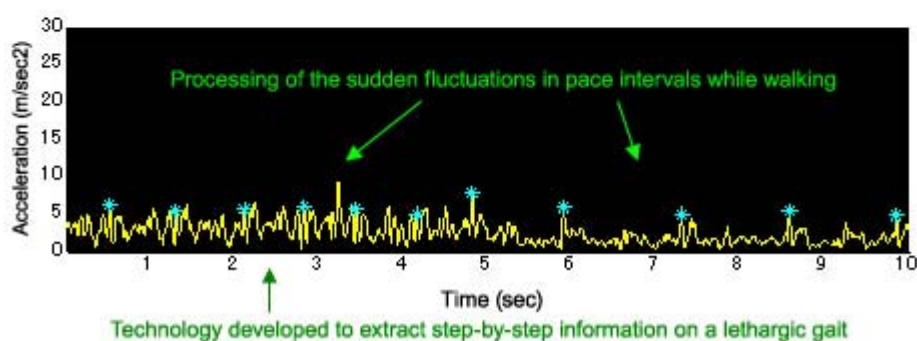
The program used in the *SEARCHGAIT* sensor system analyzes a person's walking cycle, their amount of activity, walking power and rhythmic fluctuations from acceleration data that indicates changes to ambulatory and other locomotor functions. In addition to daily health management, in the future this technology may be applied to the early detection, assessment and treatment of illnesses that generate locomotor function irregularities by using changes in everyday ambulatory rhythm and other indicators. Mitsubishi Chemical Corporation, in cooperation with a research group led by Tokyo Medical University, is developing a numerical rating as an indicator of ambulatory status targeting Parkinson's disease* sufferers. We are continuing these efforts through research to conduct a quantitative evaluation in the form of an ambulatory impediment score and to apply this work to the assessment and treatment of diseases.

*Parkinson's disease causes a fall in the excitatory transmitter, dopamine, in the brain. As a result, the functions of the neural circuits that control motion deteriorate, leading to intractable nervous disease featuring bradykinesia and immobility.

Graph representing a healthy person walking



Graph representing an ill person walking



* The *SEARCHGAIT* sensor system is provided for the purpose of research applications by research and medical institutions. It is not a diagnostic system with proven clinical significance. (July 2010)

▶ Building a Vibrant Society

For Japan, under the impact of declining birthrates and an aging population, a living environment that facilitates healthy participation in activities for as long as possible is vital to maintain and boost vitality in society as a whole. Mitsubishi Chemical Corporation developed the *SEARCHGAIT* sensor system, which helps to maintain a healthy, contented state of body and mind and aids

early detection and treatment of diseases without posing a physical burden. Using this system, which boosts detection and analysis technologies of basic actions other than walking, in combination with various sensing technologies, contributes to building a society in which people can lead a full life with peace of mind into old age.

Stakeholder Comment



Hiroshi Mitoma
Professor
Tokyo Medical University

Many disorders of the brain are classified as refractory diseases. Of these, Parkinson's disease affects many people and is characterized by nerve cell degeneration leading to immobilization. The analysis system developed by Mitsubishi Chemical Corporation that is used in the diagnostic treatment of this disorder is a breakthrough that brings tremendous hope to sufferers. In the medical treatment of Parkinson's disease, patients are prescribed medication based on ascertaining an accurate profile of their performance over the course of a typical day. However, to date it has only been possible to monitor patients during the limited time spent in outpatient clinics. Hospital admission has been the only option to assess conditions over a full day. The Mitsubishi Chemical analysis system can be used to record patient status accurately over a full day and to facilitate quantitative evaluation of ambulatory impediments and locomotor activity. Currently, this initiative has drawn keen attention from neurology associations, with nine university hospitals and two public hospitals working collaboratively to share the load of clinical research for this major project. Full-blown activities have only been running for one year, but have already spawned research papers and other signs of progress. Efforts to pave the way for approval and widespread adoption of this detection system are underway and progressing at an exceptional pace.

CSR Management

This section introduces the Mitsubishi Chemical management structure for compliance, risk and other functions.

» Corporate Governance

» Risk Management

» Internal Controls

» Intellectual Property Management

» Compliance

2010 HIGHLIGHT

Promoting Compliance Awareness

In fiscal 2009, as in the preceding fiscal year, the Company held various training sessions to promote an awareness of compliance. We concentrated training on section chiefs and group managers in an effort to efficiently and effectively implement initiatives to educate all 30,000 members of the workforce, in which these section chiefs and group managers explain the importance of compliance to the personnel to which they are responsible.

To confirm the status of compliance awareness among domestic Group companies, we conducted the fourth Compliance Awareness Survey targeting approximately 18,300 employees of domestic Group companies. We conducted similar surveys in Chinese, Indonesian and English targeting the employees of overseas Group companies.

Inappropriate Processing of Data at the Yokkaichi Plant

The Mitsubishi Chemical Group considers compliance a topmost management priority. Accordingly, we have in place 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.

Nevertheless, in fiscal 2009 we uncovered a case of improper data processing at the Yokkaichi Plant. In an effort to recover the sense of trust in the Company that had been lost as a result of this impropriety, as well as to reinstall thorough compliance, the Company's chief compliance officer (CCO) explained the gist of this problem to general managers and section managers during visits throughout the Company's headquarters, plants and branches.

The CCO then instructed Group managers about inventorying operations from legal and contractual standpoints and participated in an exchange of opinions with these managers concerning workplace problems.

Please refer to the sections entitled "[RC Promotion](#)" and "[Preventing Air, Water and Soil Pollution](#)" for details concerning the Group's response to the issue of the improper processing of environmental data at the Yokkaichi Plant.

Internal Controls

Basic Policy and the Status of System Introduction

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

In fiscal 2009, the Company conducted an evaluation of internal control over financial reporting, as prescribed by the Financial Instruments and Exchange Law. This evaluation confirmed that internal control systems were operating effectively.

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

Risk Management

Basic Policy

Although the Mitsubishi Chemical 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 Group implemented the Mitsubishi Chemical Corporation 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

Mitsubishi Chemical'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.

Furthermore, the Risk Management Committee, which meets regularly, was established to assist 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 Mitsubishi Chemical Group risk management.

In fiscal 2009, the Risk Management Committee reported significant risk and discussed future risk management initiatives.

Identification of Major Risk

Mitsubishi Chemical'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 such as 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 such factors as financial losses, human losses and losses of public trust, 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 Mitsubishi Chemical Holdings Group's management meetings.

Formulation of the Business Response Plan

Mitsubishi Chemical strives to formulate business continuity plans (BCPs) 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.

In fiscal 2007, the Mitsubishi Chemical 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 Mitsubishi Chemical Group's requirements for BCP preparation.

In fiscal 2009, we set up a task force in line with the manual of countermeasures drawn up in response to the pandemic outbreak of a new type of influenza. We also drew up measures to respond to employee health issues, ensure smooth ongoing operations, gather and disseminate information and limit overseas business travel.

Individual departments also considered countermeasures that would allow operations to continue even in the face of an earthquake affecting central Tokyo or a new influenza pandemic.

Intellectual Property Management

Intellectual Property Protection and Prevention of Infringements

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, while legally protecting Mitsubishi Chemical Corporation's intellectual property.

RC Activities

Basic Policy

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 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, disaster prevention, occupational safety and health, quality assurance and chemical/product safety—the Mitsubishi Chemical Group is striving to enhance its trust-based relationship with society and contribute to the building of a sustainable society.

Mitsubishi Chemical 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.

Click [here](#) for the complete Mitsubishi Chemical Group RC Promotion policy.

RC Activity Promotion Organization

The Mitsubishi Chemical Group RC Promotion Committee meets once a year. Chaired by Mitsubishi Chemical's President, the conference is attended by executives in charge of research, production, business operations, and administrative 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, Mitsubishi Chemical's various departments and group companies formulate action plans tailored to the substance, type, and specifics of their business activities, and implement RC activities.

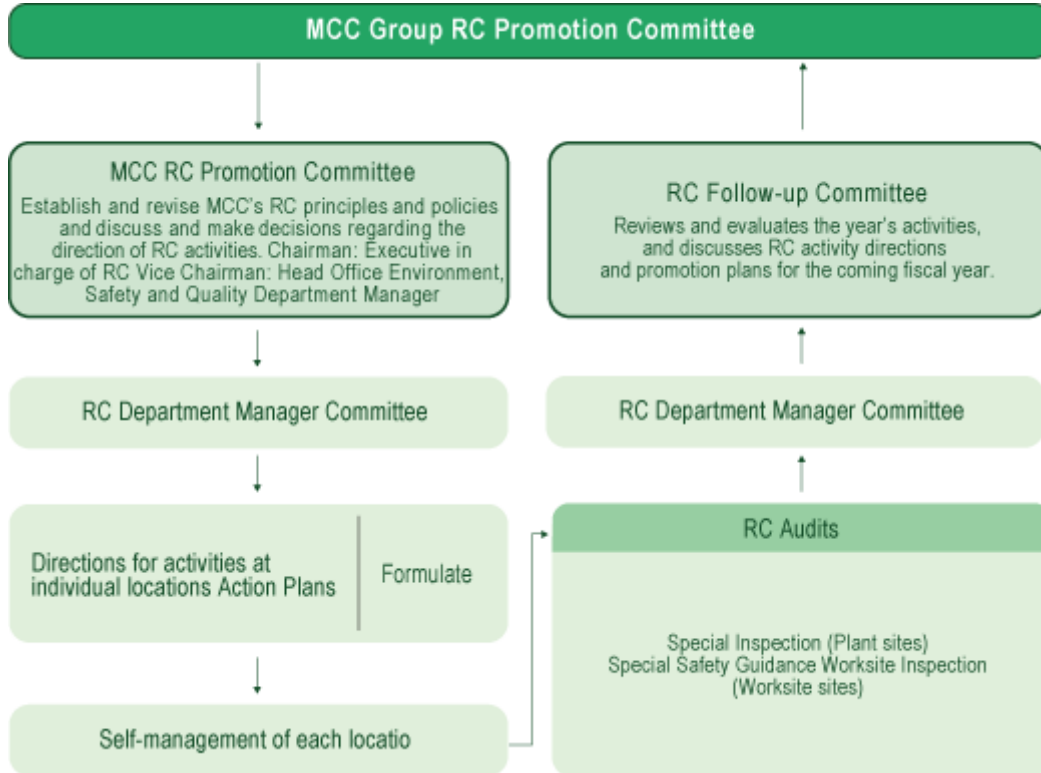
The Five Core Components of the Mitsubishi Chemical Group's RC Activities



Mitsubishi Chemical's RC Activity Promotion Organization

The Mitsubishi Chemical 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 administrative departments, 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. The committee attempts to reduce risks associated with potential hazards by reviewing the safety of existing processes, equipment and operations.

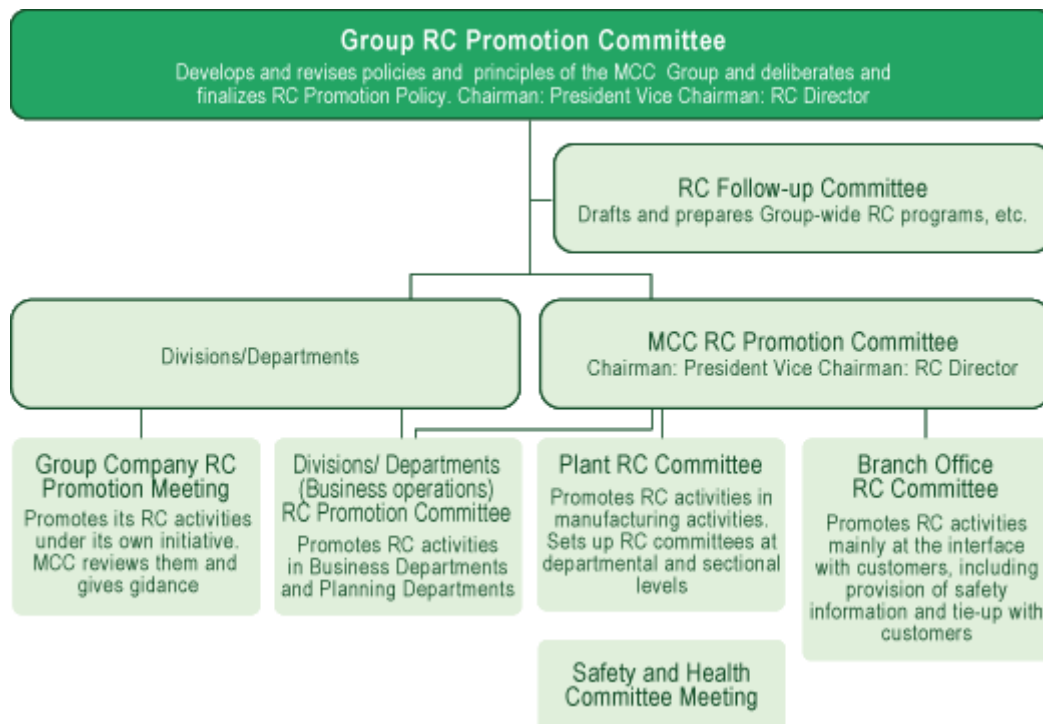
Mitsubishi Chemical's RC Promotion Organization



Group Company RC Activity Promotion Organization

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

RC Promotion Organization of the Mitsubishi Chemical Group



Mitsubishi Chemical Group Companies Implementing RC Activities

- – Mitsubishi Chemical subsidiary subject to the Japanese Companies Act: Group performance data collected and published in this CSR Report
- – Mitsubishi Chemical Subsidiary subject to the Japanese Companies Act (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

- Shinryo Corporation
- Nippon Kasei Chemical Company Limited
- The Nippon Synthetic Chemical Industry Co., Ltd.
Frontier Carbon Corporation
- Mitsubishi Chemical Analytech
- Mitsubishi-Kagaku Foods Corporation
- Mitsubishi Kagaku Media
- 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 Business

- API Corporation
- Mitsubishi Chemical Medience Corporation

Others

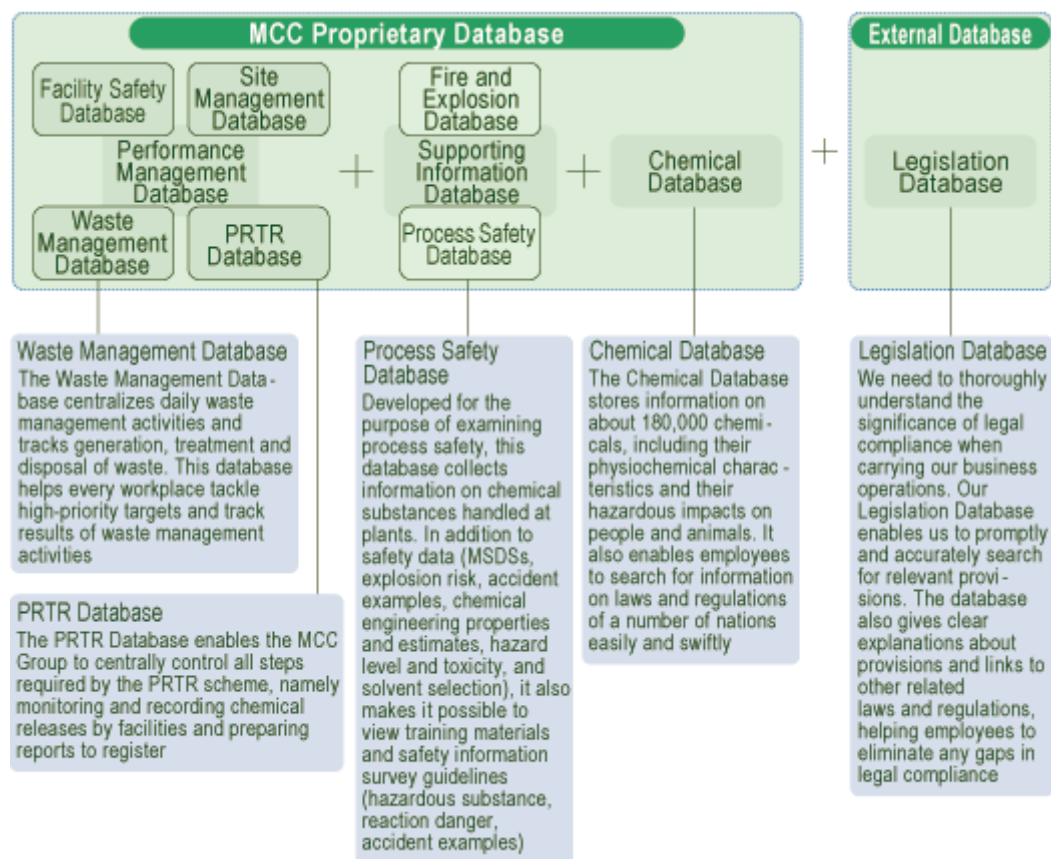
- Mitsubishi Chemical Engineering Corporation
- Mitsubishi Chemical Group Science and Technology Research Center, Inc.
- Mitsubishi Chemical High-Technica Co., Ltd.
- Mitsubishi Chemical Logistics Corporation
- RHOMBIC CORPORATION
- Mitsubishi Chemical America Inc.

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.
Chuo Rika Kogyo Corporation
TM AIR CO., LTD.
Nippon Ester Co., Ltd.
- Japan Polychem Corporation
Japan Unipet Co., Ltd.
Mitsubishi Engineering-Plastics Corporation
YUPO CORPORATION
- Yokkaichi Chemical Co., Ltd.
- APCO (SUZHOU) CO., LTD.
Sam Nam Petrochemical Co., Ltd.
- Sunprene (Thailand) Co., Ltd.
Sam Yang Kasei Co., Ltd.
- Ningbo Mitsubishi Chemical Co., Ltd.
- Beijing Ju-Ling-Yan Plastic Company Limited
- PT. Mitsubishi Chemical Indonesia
- Mitsubishi Chemical Performance Polymers, Inc.
- MCC PTA India Corp. Private Limited
- MCC Advanced Polymer Ningbo., Ltd.

Database on Environmental Conservation, and Safety and Security

Mitsubishi Chemical has created the Environmental Protection and Safety Database to support RC activities. Use of this database for various purposes, ranging from product development to production, facilitate the sharing and management of RC information.



RC Audits

Mitsubishi Chemical conducts RC Audits of production, research, and marketing facilities, and business operation units.

Beginning in fiscal 2008, RC Audits at production sites and research facilities have been conducted with a particular emphasis on frontline worksite audits.

In light of issues surrounding the improper handling of wastewater and exhaust data in fiscal 2009 at the Yokkaichi Plant, we conducted an audit emphasizing measures to prevent recurrence. The environmental management status of each site was confirmed and guidance on necessary improvements was provided in an attempt to improve RC performance.

RC Activities

Activity Targets and Results

Priorities	Target for Fiscal 2009	Performance	Assessment	Target for Fiscal 2010
Process Safety and Disaster Prevention				
Achievement of zero facility-related accidents	Reemphasize Safety First Awareness	Implemented as planned, but 10 accidents occurred	★	Ongoing reemphasis on Safety First Awareness
	Make RC standards consistent throughout the Company	Finished ensuring consistency of safety lock standards and revision management standard	★★★	Revise consistency standards to ensure acceptability
	Conduct process safety training	Commenced process safety training for mid-level plant staff (330 attended lectures)	★★★	Ongoing
Occupational Safety and Health				
Prevention of occupational accidents	Lost time injury frequency <0.1	Lost time injury frequency: 0.26 (9 lost time injury accidents)	★	Lost time injury frequency <0.1
	Increase efforts targeting companies with high occupational accident rates	Meetings held to examine results at each group	★	Ongoing
Occupational health management	Introduce job-level-based mental health education	Introduction of mental health education to new employees, first-year employees, staff and new executive training Implemented training sessions at each plant	★★★	Continue providing health checks for retirees who request them
Environmental Conservation				
Prevention of environmental accidents and problems	Continue to achieve zero environmental accidents	Incidence of inappropriate environmental management (Recognized as a major incident)	★	Zero major environmental accidents

Priorities	Target for Fiscal 2009	Performance	Assessment	Target for Fiscal 2010
Reduction of PRTR substance emissions	Promote measures that focus on atmospheric concentration of benzene	50 metric ton reduction in substances regulated under the PRTR Law (Mitsubishi Chemical), an increase of 15 metric tons (Mitsubishi Chemical Group) Reduced benzene emissions 13 metric tons	★★	Continue, with emphasis on benzene measures
Reduction of VOC emissions	Promote measures involving VOC-reducing equipment	Continued to achieve fiscal 2010 target (50% reduction compared to fiscal 2000 levels) Reduced emissions by 890 metric tons compared to previous fiscal year (54% reduction compared to fiscal 2000 levels)	★★★	Advance facility measures being planned
Reduction of landfill disposals Effort to achieve zero emissions	Continue efforts to reduce disposals at landfills by 20% compared to fiscal 2008	Landfill disposal for the entire Group reduced 40% versus the prior fiscal year	★★	Promote planning at each company
Global warming countermeasures	Continuing promotion of energy conservation during production	Unit energy consumption increased by 12%, reduced emissions by 0.5% (Mitsubishi Chemical) and 1.3% (Group) compared to the previous fiscal year	★★	Continuing promotion of energy conservation
	3% improvement in transportation-related unit energy consumption over three years	Unit energy consumption increased 1.3% year on year (Mitsubishi Chemical)	★★	Implement plans for individual companies and units
	Reduction of environmental impact at the office and home	Reduced CO ₂ emissions at head office by 5% Continued environmental accounting record-keeping related to energy conservation in the home	★★★	Ongoing reduction of environmental impact at office and home

Priorities	Target for Fiscal 2009	Performance	Assessment	Target for Fiscal 2010
Chemical Safety/Quality Assurance				
Compliance with international chemical safety regulations	Prepare GHS-compliant MSDS	Began preparing next, GHS-compliant, MSDS	★★★	Begin distributing GHS-compliant MSDS
	Comply with regular REACH registrations	Performed next registration activities via EU consortium	★★★	Complete regular registration (substances exported to the European Union in amounts of 1,000 metric tons/year or more)
	Promote international chemical substance management activities	Joined International Council of Chemical Associations (ICCA) initiatives	★★★	Ongoing promotion of international chemical substance management activities
Product information management, establishment and implementation of green management system	Continue operating and improving systems	Began examining system operations and improvements	★★	Continue operating and improving systems
RC Communication				
Mitsubishi Chemical promotion of groupwide implementation of RC activities	Enhance safety awareness	Shared RC information within the Group by continuing to convene information exchange meetings (held three times) Conducted Safety Day activities	★★★	Continue to hold information exchange meetings Continue conducting Safety Day activities
Promotion of communications	Continue and enhance communications, including through issuance of CSR report	Published Mitsubishi Chemical Group CSR Report, plant site report, Group company RC report	★★★	Continue communication through CSR report publication

Process Safety and Disaster Prevention

Promoting Priorities for Zero Facility-related Accidents

Recognizing that building safety is essential to the sustainment of corporate activities, Mitsubishi Chemical is engaged in safety activities targeting zero facility-related accidents. Despite its efforts, however, the Mitsubishi Chemical Group experienced fires at the Kashima Plant in 2007 and at the Kurosaki Plant in 2008.

Fully realizing the seriousness of these accidents, the Mitsubishi Chemical Group is implementing the *APTSIS 10* mid-term management plan, which makes safety a topmost management priority and puts a particular focus on installing additional safety equipment. To this end, Mitsubishi Chemical carries out thorough accident recurrence prevention measures and promotes the revision of facility safety measures and standards.

Items Implemented in Fiscal 2009

The measures described below were implemented companywide to prevent accidents and other problems from recurring.

1. Facilities: Incorporated effective safety measures

We conducted investigations to evaluate the effectiveness of safety measures introduced to prevent the recurrence of accidents and other problems. In other cases, we determined whether measures put in place in the past to prevent such recurrences remained effective or had deteriorated over time.

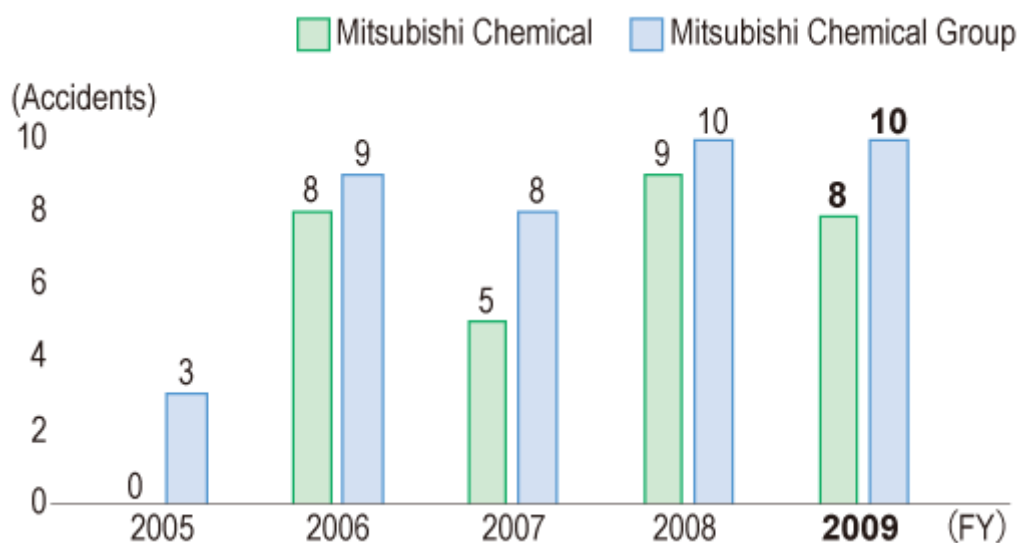
2. Management: Revised and introduced standards to ensure consistency and acceptability

In addition to creating a structure for these standards, we successively revised safety-related standards requiring companywide consistency, and all plants began operating under the new standards.

3. Confirmation of measures: Performed RC audits

We conducted on-site audits to confirm the standardization of safety measures, their operational status and their location-wide implementation.

Number of Facility-related Accidents



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

The Mitsubishi Chemical 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.

SAs were thoroughly implemented with regard to daily operating conditions and changes in operation and management standards were revised to require the presence of Safety Review (SR) instructors¹ from outside of the relevant department when conducting SAs.

For existing processes, facilities, and work procedures, the Group established SR instructors at all production sites 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.

¹ Safety Review (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 Mitsubishi Chemical 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 Mitsubishi Chemical Group.

We use the latest safety-related technology and information relating to R&D, new plant construction and revisions to existing facilities when performing SAs and SRs to boost plant reliability.

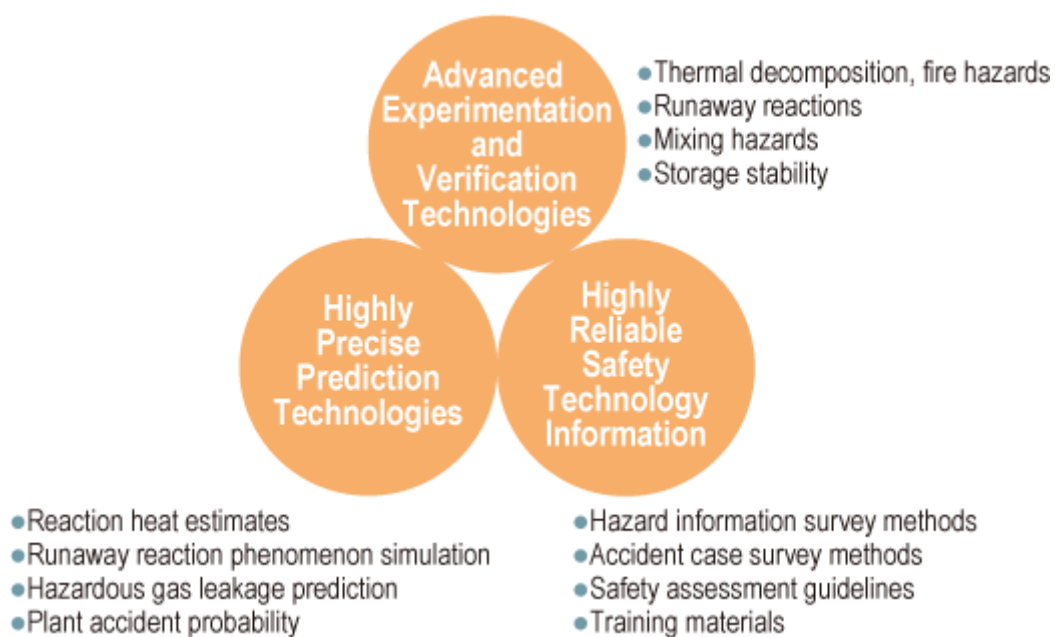
Also, in the event of an accident or trouble, the laboratory will investigate the cause from a scientific point of view and propose safety measures to prevent recurrence.

In fiscal 2009, we began providing process safety training for mid-level plant employees, and 330 participated. The training covered such topics as the handling of substances during daily operations and information useful to them on a practical level, such as during plant safety evaluations. We plan to keep providing this training, enhancing the skills of operational employees.



Process Safety Training

Three Pillars of Fire and Explosion Prevention Technology



Focus on Logistics Safety through Accident Prevention Drills

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



Training for an accident involving a leaking coastal vessel

Comments

Winning at the Firefighting Technology Training Contest

The 21st Firefighting Skill Training Contest took place in the city of Kurashiki, Okayama Prefecture, which is held by the city's Fire Bureau and Fire Protection Association. In our debut, in the fire extinguisher handling competition, we came in first of the 15 teams in the women's division. We began training four months prior to the event, practicing our skills at putting out mock fires. Mastering the intricate movements proved difficult, and as we toiled through the hot weather, the physical and physiological strain got to us. Many times we grew disheartened, but our instructors' enthusiasm and our sense of anticipation at the pride we would feel when wearing the Company's name in the competition kept us going. During the competition, we were so nervous that our legs were shaking, but we finished. Once we learned that we had recorded our best time ever, we were profoundly moved. Winning our first-ever competition was amazing, and we owe a debt of gratitude to our instructors and work colleagues. Hopefully, we can apply the important lessons that we learned through our firefighting technology training in the workplace.



Yumi Tanaka (Polyolefin Production Department) and Nozomi Utsumi (Responsible Care Promotion Department), Mizushima Plant, Mitsubishi Chemical Corporation



Topics

Cultivating a Safety Culture at the Kashima Plant

Learning from the outcome of the fire that broke out at the Kashima Plant in December 2007, we are implementing measures that go beyond simply preventing the recurrence of a similar accident. Instead, we have mounted an initiative to cultivate a pervasive safety-conscious culture and climate that extends to all corners of the plant. Our aim is to prevent all manner of accidents from occurring.

We began by identifying and analyzing the problems and issues inherent in our staff and organization. We then decided how we wanted to be in the future. To realize this vision, we formulated five priority measures, which we are assiduously putting into action.

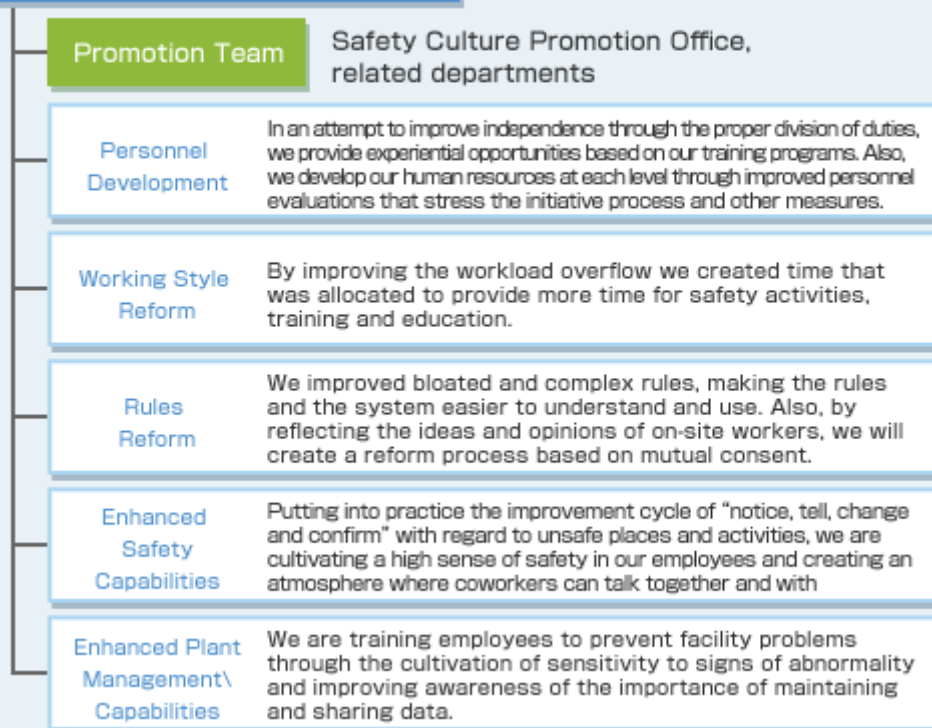
● Implementation Structure

The newly established Safety Culture Promotion Office serves as the promotion secretariat. We have also created committees, one for each priority measure. These follow up on decisions made at the Safety Culture Promotion Meeting, which is attended by plant executives.

In addition to ongoing activities that reflect the input it receives directly from the workplace, each committee is working to instill a safety culture.

Five Committees and Their Roles

Safety Culture Promotion Meeting



● Individual Committees Cultivate a Safety Culture: Activities and Results

1. Personnel Development Committee

- Delegated part of the authority for approving construction safety instructions
- Drafted and implemented career plans for regular employees and managers
- Set fiscal 2009 performance targets for group managers and evaluated their performance
- Evaluated the skills of group managers of the production, maintenance and engineering divisions

2. Working Style Reform Committee

- Followed up on and improved implementation of time-creation measures (Defined five manners for e-mail, designated meeting-free weeks and times, and consolidated ISO 9000 and ISO 14000 audits)
- Continued adding to measures introducing small efficiencies
- Supported individual efforts to boost work efficiency
Survey results showed that employees' sense of working hectically and being overburdened had fallen, and that communications within and among workplaces had improved, as had the sense of community

3. Rules Reform Committee

- Created rule revision process that was considered acceptable
- Completed revisions to convert work procedure safety regulations into easy-to-implement rules
- Continued to create system for easy-to-understand rules

4. Enhanced Safety Capabilities Committee

- Finished building a structure for an improved PDCA cycle employing "notice, tell, change and confirm" procedures
- Began using working and construction incident examples to formulate a new type of shared knowledge (the Know-Why Books) to leave to posterity

5. Enhanced Plant Management Capabilities Committee

- Increased the number of awards given for noticing and reporting signs of abnormality (gradually rising from 10 per month to 30 over the course of a year)
- The results have begun showing a better understanding of the importance of these activities.
- Achieved awareness by individual groups of the effectiveness of plant management reviews in recognizing the importance of and sharing the data they hold

These activities, which have been underway for more than a year and a half, are beginning to demonstrate steady signs of success. Surveys of employees of Mitsubishi Chemical and affiliates suggest that the activities are having a positive impact. We have begun incorporating these activities into our medium- to long-term planning with a view to continuing them on a permanent basis.

Occupational Safety

Raising Safety Awareness and Promoting Extensive Safety Activities

Aiming to eliminate occupational accidents, the Mitsubishi Chemical Group has strengthened occupational safety efforts by developing the Mitsubishi Chemical Group Accident Prevention and Safety Management Guidelines in 2005. These guidelines address topics like the importance of risk prediction and pointers during regular work¹ and during non-regular work² 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 Mitsubishi Chemical Group lost time injury frequency to 0.1 or lower, in fiscal 2009 the lost time injury frequency remained high, with Mitsubishi Chemical at 0.46, and the Group as a whole at 0.26.

55% of the lost time injury accidents over the past five years were comprised of falls, drops and being caught. Chemical and thermal injuries from substances specific to chemical plants constituted another 29%, with these two categories together accounting for 84% of total lost-time injury accidents.

These data indicate inadequate 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 275 in fiscal 2009). In addition, to make use in the future of incident examples and cases within the Group, we promote the sharing of various accident information and verification throughout the Group. In fiscal 2009, we began sharing information about minor workplace injuries, as well as cases of major near misses, throughout the Group. By sharing information about minor incidents, we aim to prevent their escalation.

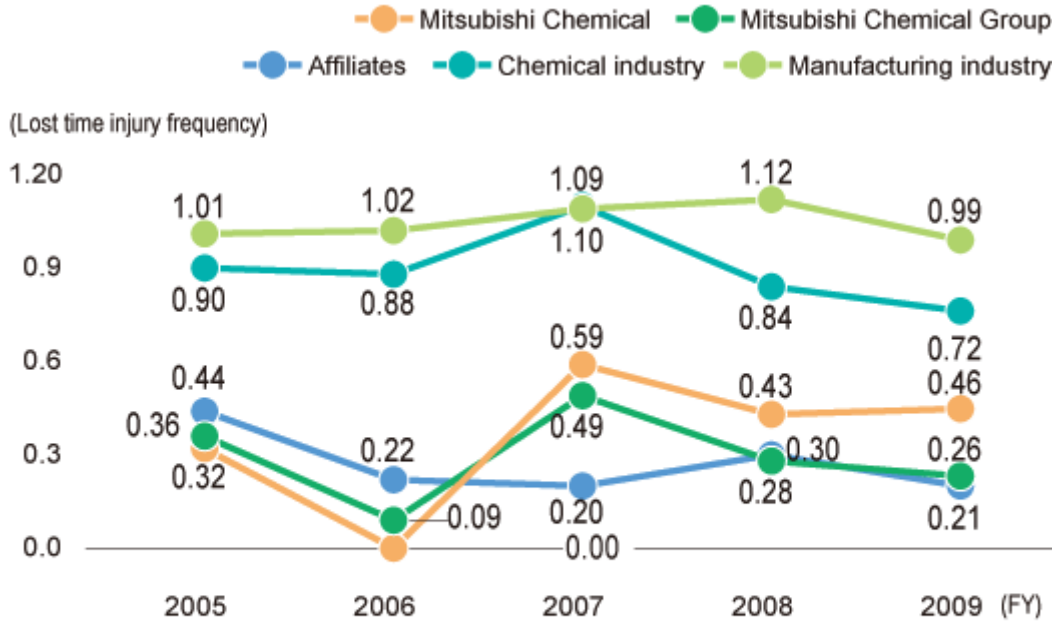
When production processes change, work management must be revised as well. In fiscal 2009, we made the way such standards are set at Mitsubishi Chemical plants consistent throughout the company. During the year, we also began reflecting these changes by revising and enhancing rules and standards at Group companies.

Furthermore, as an added measure, Mitsubishi Chemical and its Group companies began, in fiscal 2008, to implement RC audits. We continued these efforts in fiscal 2009 by conducting RC audits targeting workplaces exhibiting signs of ongoing weakness. By directing specific improvements and activities, we aim to ensure appropriate and effective support that will improve the level of safety throughout the Mitsubishi Chemical Group.

¹Regular work: Work that is repetitive and performed on an ongoing basis.

²Non-regular work: Non-regular work: Work that is not performed on an ongoing basis.

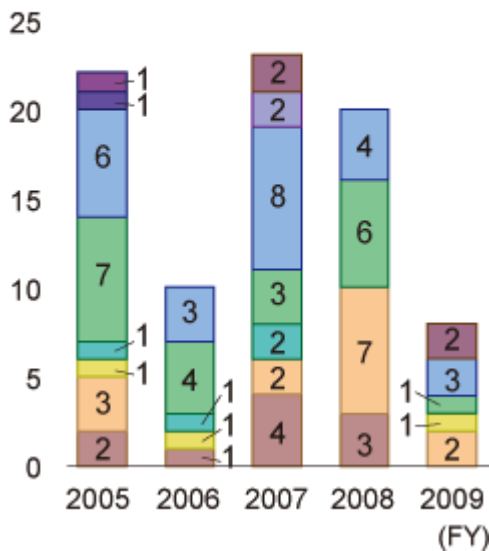
Lost Time Injury Frequency



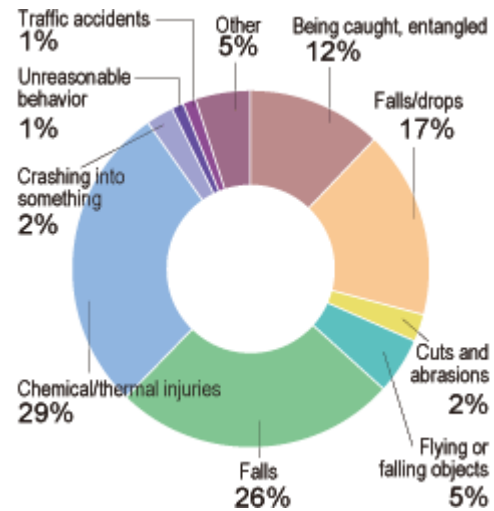
$$\text{Lost time injury frequency} = \frac{\text{No. of casualties to occupational accidents}}{\text{Working hours}} \times 1,000,000$$

Lost Time Injury Accidents by Types (Mitsubishi Chemical Group)

- Being caught, entangled
- Falls/drops
- Cuts and abrasions
- Flying or falling objects
- Falls
- Chemical/thermal injuries
- Crashing into something
- Unreasonable behavior
- Traffic accidents
- Other



Breakdown of Lost Time Injuries (FY2005 – FY2009)



Comments

Aiming for Complete Accident Eradication

Fortunately, no major occupational accidents have occurred at Nippon Synthetic Chemical. At the same time, we have not been able to improve our lost time injury frequency and frequency of work lost due to minor occupational accidents as much as planned.

To keep such incidents from recurring, we have introduced measures to detect and counter all occupational accidents, however small—even caterpillar bites. We log this information in an internal database of safety and environmental information that is available across the company. Also, recently we have noticed that occupational accidents tend to occur more frequently among people with less experience, so we have introduced “safety sensitivity training.” This training is designed to raise individual awareness of safety on an ongoing basis. We are also taking measures to ensure that aging equipment is safe to operate.

Last year, we underwent a Mitsubishi Chemical Group RC audit, which identified certain issues that our internal audits had not noted. Following internal deliberation, we mounted a companywide effort to address these points.

Going forward, we will continue to conduct safety activities as part of our efforts to prevent occupational accidents.



Makoto Mishima,
General Manager,
Environment, Safety
and Quality
Assuarance
Department, The
Nippon Synthetic
Chemical Industry
Co., Ltd.

Occupational Health

Managing Chemical Substances Appropriately in the Work Environment

Mitsubishi Chemical is handling new chemical substances including nanomaterials. To ensure the health of employees we conduct human health impact assessments prior to each stage that involves such substances, from basic research through to manufacturing, and take the necessary precautions.

With regard to chemical substance handling, Mitsubishi Chemical 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 and necessary measures are taken for current as well as retired employees who may have handled asbestos in the past.

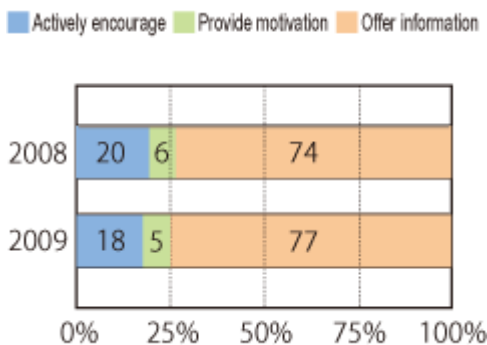
Fostering Emotional and Physical Health

Mitsubishi Chemical undertakes initiatives to ensure the emotional and physical health of its employees.

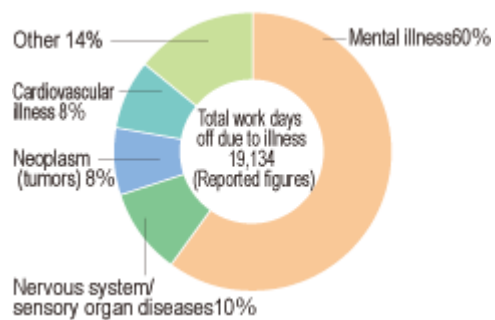
We cultivate emotional health by encouraging employees to take good care of themselves and providing training, by job level and as necessary, to help managers respond appropriately to subordinates who may be experiencing emotional difficulties. Individual plants hold training sessions as needed, and we are setting up an organization to encourage employees to drop by for informal consultations.

Answering a request from the Mitsubishi Chemical Health Insurance Union, we have begun offering specific health guidance as a regular follow-up to standard health examinations.

Percentage of Standard Health Examinations Progressing to the Specific Health Guidance Level (Mitsubishi Chemical)



Work Days Off Due to Illness (Mitsubishi Chemical 2009)



Comments

Teaching People How They Sleep

Proper food, exercise and rest are typically cited as the essential elements of a healthy working lifestyle. Of these, rest has generally been equated to hours of sleep or evaluated only subjectively.

Our approach was different. We had each of the people at the Kurosaki Plant who wanted to participate wear a wristwatch-like sleep sensor that provides an objective indicator of sleep similar to a person's brain waves. We then provided individual sleep coaching based on the resulting analysis.

In 2009, some 30 people took part in this study. The number of people who are curious about their sleeping patterns seems to be increasing. Some participants wonder about or have concerns about their sleeping conditions, while others suspect themselves of sleep apnea.

Some participants comment that gaining a better understanding of sleep is reassuring. We plan to continue providing this service, as there is a recognized connection between sleep disorders and lifestyle-related disease.



Shinko Kaneko,
Industrial Nurse, Kurosaki Plant,
Mitsubishi Chemical Corporation

Environmental Management

Promoting to reduce the environmental impact of all business activity processes

Mitsubishi Chemical 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. We are proactive in our efforts to address global environmental problems through measures addressing global warming and resource depletion, such as preventing atmospheric, water and soil contamination resulting from our business activities. To the same end, the Company is also working to preserve biodiversity and develop environmentally friendly products and services.

Preventing Air, Water, and Soil Pollution

Augmenting Environmental Equipment and Enhancing Our Management Structure to Prevent Air and Water Pollution

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 Group, therefore, is taking steps for removing particulates, NOx, and SOx from atmospheric emissions. We have reduced NOx and SOx emissions substantially since fiscal 2007. This is the result of such measures as switching to fuels having lower environmental impact and upgrades to more efficient facilities.

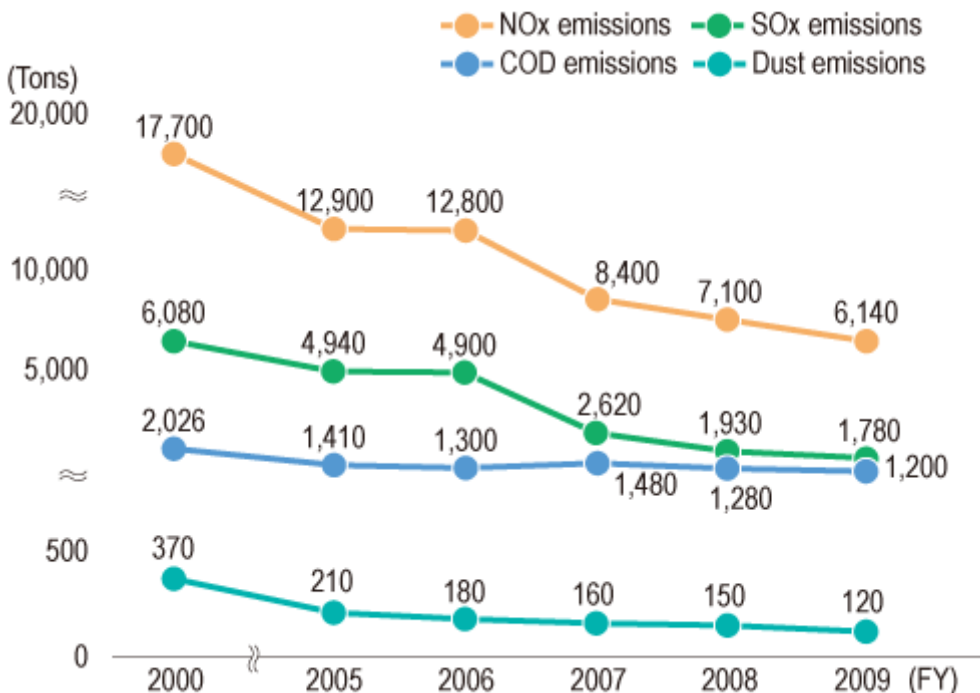
Also, through such efforts as upgrading wastewater processing facilities, we continue working to curtail the discharge of hazardous substances into water and conform to water quality standards regulating contained amounts of COD, nitrogen and phosphorous.

To enhance management systems, the people in charge of operations at all plants meet at least twice a year. At these gatherings, participants exchange information about societal and environmental trends and deliberate companywide targets and plans for promoting improvements. Progress reports are provided to management for their review. We also provide regular opportunities to share information among the personnel in charge of environmental management at Group companies.

As a more practical initiative, we encourage plant personnel in charge of pollution prevention to acquire certification and conduct repeated environmental conservation training for employees involved in operations, as understanding the fundamentals of pollution helps them in their environmental management efforts.

In connection with these facilities and systems, 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 (Mitsubishi Chemical)



Continuing Voluntary Surveys to Assess the Status of Soil and Groundwater Contamination and Taking Appropriate Countermeasures

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

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

Improper Handling of Environmental Information at Mitsubishi Chemical Yokkaichi Plant

Mitsubishi Chemical apologizes sincerely for the substantial concern it has caused to a host of people through the improper handling of wastewater data and the missing data on exhaust gases at its Yokkaichi Plant.

1. Backgrounds and status

- In January 2010, Mitsubishi Chemical received a request to provide a public report on the wastewater analysis that the Yokkaichi Plant had subcontracted to a Group company that performs analysis. Responding to this request, Mitsubishi Chemical prepared reports indicating official wastewater and exhaust gas analysis and measurement results for the Yokkaichi Plant over a period spanning three years and nine months. We sought to determine whether data had been handled improperly, conducted additional surveys and reported the results to Mie Prefecture and the city of Yokkaichi in February 2010.
- At the same time, Mie Prefecture and the city of Yokkaichi conducted spot checks. In the Report Concerning the Creation of a Pollution Prevention Organization it submitted in March 2010, Mitsubishi Chemical outlined to these parties the measures it had undertaken to address the deficiencies that had been identified.
- At the same time, in January 2010 Mitsubishi Chemical formed the Special Investigation Team primarily comprising outside attorneys to thoroughly investigate compliance violations and take comprehensive steps to prevent recurrence. Through initiatives such as conducting hearings of people involved in the original occurrence, the team sought to ascertain the underlying realities.
- In June 2010, we submitted to Mie Prefecture and the city of Yokkaichi a final report describing the causes indicated in Special Investigation Team survey results and recommendations for preventing recurrence.

2. Special Investigation Team Survey Results

(1) Wastewater analysis (survey items: approximately 12,000)

The survey covered a numerous items. In addition to one indication of distortion, the survey uncovered one instance in which a value that had been indicated as an analysis outlier in first-round sampling was revised to fall within the scope of standard values when remeasured. In total, 35 such instances of inappropriate handling were confirmed.

(2) Exhaust gas analysis (survey items: approximately 5,000)

Although no instances of data distortion or replacement were confirmed, a total of 229 instances of nonconformance were detected. These involved such issues as analysis repetitions and periods not conforming to legal statutes.

3. Measures to Prevent Recurrence

Based on the findings and recommendations of the Special Investigation Team, in addition to the recurrence prevention measures submitted in March 2010, Mitsubishi Chemical's Yokkaichi Plant proposed and introduced heightened measures. We are also working throughout the Mitsubishi Chemical Group to prevent recurrence. To ensure the implementation of recurrence prevention measures, we have introduced companywide initiatives to bolster compliance.

Overview of Measures to Prevent Recurrence

(1) Yokkaichi Plant's Response

1. Create manuals and systems that will render impossible the distortion of figures and other activity (such as incorporating management reinforcement measures into manuals, and creating a computer system that will allow consistent management of information from analysis through to report issuance)
2. Cultivate compliance awareness and promote a strict understanding of laws and regulations (through such measures as ongoing compliance training and the promotion of certification on managing the prevention of pollution)
3. Review organizational structure, optimize operations (such as by reinforcing environmental management departments and promoting wastewater management efficiency through the consolidation of wastewater outlets)
4. Make the checking function more robust (such as by enhancing measurement planning and result confirmation, and clarifying procedures for responding when malfunctions arise)

(2) Mitsubishi Chemical Group's Response

1. Clearly incorporate environmental management policies into the Mitsubishi Chemical Group's RC action policies and ensure companywide awareness.
2. Accumulate and share information even in instances of minor trouble or near-miss incidents, and address these problems through human-related factors and facilities.
3. Strengthen the Mitsubishi Chemical Group's auditing function by linking activities of the Plant Accreditation Audit Department, established within the Environment, Safety and Quality Department at Mitsubishi Chemical's head office in June 2010, and the Internal Control Department.
4. Enhance environmental auditing through the sharing of information by the Chief Compliance Officer to all locations and Group companies, as well as through employee training and education.

Preventing Global Warming

Reducing CO₂ Emissions through the Promotion of Energy Conservation Activities

Mitsubishi Chemical Corporation 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 in its *APTSIS 10* mid-term management plan.

As we move into the third year of a petrochemical plant energy conservation project that commenced at the Mizushima Plant in fiscal 2008, we are extending these activities to include the Kashima, Kurosaki and Yokkaichi plants. In fiscal 2009, Mitsubishi Chemical came up with approximately 20 ideas that would help lower CO₂ emissions at the Kashima Plant by 40,000 tons. Many of these ideas—such as the thorough recovery of waste heat and optimizing the pressure levels of steam used at the plant—promise to be highly effective at conserving energy. We believe that these concepts can be extended to other plants, and we are currently working out the details that will allow us to put these ideas into practice.

Comments

Turning Ideas into Reality, Taking on the Challenge of Improving Processes

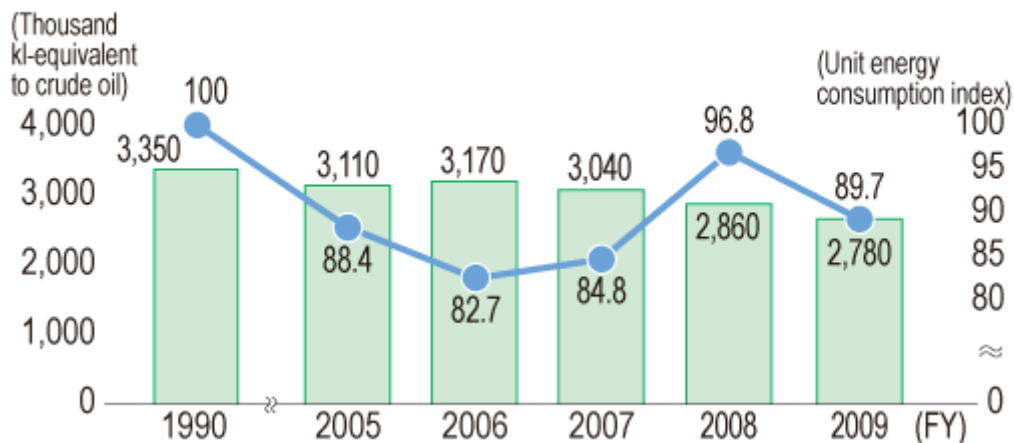
People tend to shy away from process improvements because they believe it will be difficult to alter existing facilities. It is certainly true that it was difficult, and we had to take numerous factors into consideration, just to set up a single heat exchanger. But because we were compelled by the demands of a CO₂ reduction project, and we recognized that we *had to* turn the ideas into reality, ultimately we succeeded on this front. From the outset, the need to involve the people around us in this process was abundantly clear. Based on our success in improving this process, I look forward to the challenge of coming up with new ideas and developing the technologies to put them into practice. In this respect, I will do my best to ensure progress at the plant, as well as on a personal level.



Ryuhei Itou,
BPA Process Group,
R&D Center, Kashima
Plant

Energy Consumption (Mitsubishi Chemical)

■ Energy consumption —●— Unit energy consumption

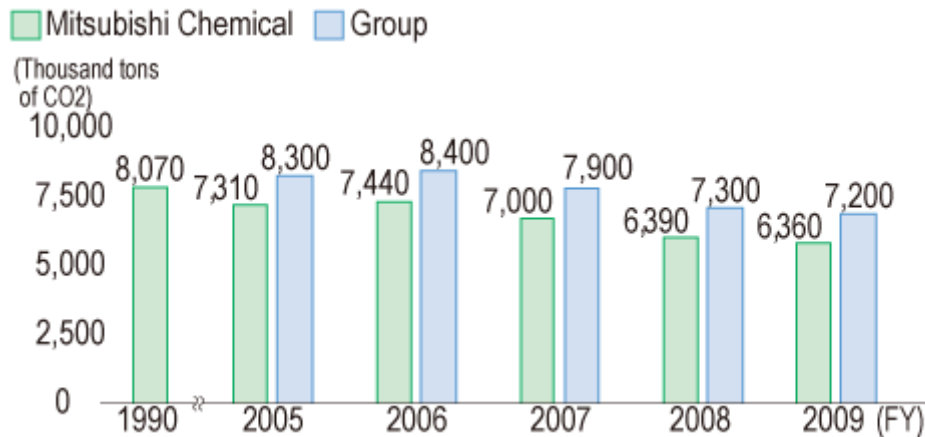


21% Reduction in Fiscal 2009 CO₂ Emissions Compared to Fiscal 1990 Levels

In fiscal 2008, the global recession resulted in a significant decrease in production. By comparison, production levels recovered in fiscal 2009, causing unit energy consumption to rise 7% year on year. In terms of energy use, however, ongoing energy conservation activities and revisions in fuel use led to a reduction of 84,000 kl on a crude oil equivalency basis. Accordingly, during the year Mitsubishi Chemical's CO₂ emissions were down 21%, compared to fiscal 1990 levels. Overall Group emissions were reduced by 1.4% compared to the previous fiscal year.

Going forward, in addition to reducing unit energy consumption, the Mitsubishi Chemical Group will continue to 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 CO₂ emissions in society.

CO₂ Emissions



Note: From 2006, figures are reported in accordance with the Law Concerning the Promotion of Measures to Cope with Global Warming. For purposes of comparison, we have also calculated the figures for fiscal 2005 and fiscal 1990 on this basis. Owing to this recalculation, figures related to energy purchases and emission coefficients for certain derivative fuels may differ from those presented in the CSR report for the preceding fiscal year.

Ongoing Initiatives to Reduce CO₂ Emissions from Transportation

As a specified business operator designated in the Revised Act on the Rational Use of Energy implemented in April 2006, Mitsubishi Chemical submits energy consumption results and an energy conservation plan to the Ministry of Economy, Trade and Industry each year. As directed in the act, We are also working to achieve the objective of reducing unit energy consumption units by an average of 1% annually in the medium- to long-term through initiatives to reduce CO₂ emissions with our main logistics contractor Mitsubishi Chemical Logistics.



"Friend" fins added to ships to increase fuel efficiency

The addition of "friend fins" on vessels achieved an average increase in fuel efficiency of 5% in fiscal 2008. Furthermore, we installed on-board terminals and eco-tires on approximately 300 trucks which improve fuel efficiency. However, transport load efficiency decreased owing to our significantly lower sales volume, holding the improvement in unit energy consumption to 0.2%, compared with fiscal 2007 levels.

In addition to continuing the efforts commenced in the preceding fiscal year, in fiscal 2009 we surpassed targets for improving fuel efficiency and reducing fuel usage as defined on the basis of the Revised Act on the Rational Use of Energy. Even so, overall unit energy consumption worsened increased 1.3%, compared with the previous year's level, as lower shipping volumes led to differences in the truck and ship transport ratios and a major reduction in the lot size of products transported by ship. Using fiscal 2006 as the base year, the cumulative reduction in unit energy consumption during the past three years amounted to 1.5%. This falls below the 1% annual reduction stipulated by the revised act.

In fiscal 2010, we plan to continue the initiatives that are already in place. To reduce energy consumption even further, we plan to introduce such new measures as applying to vessels a type of paint designed to improve their fuel efficiency.

Result of Efforts to Reduce Energy Consumption Units

	Fiscal 2006	Fiscal 2007	Fiscal 2008	Fiscal 2009
Energy consumption (GJ)	1,175,069	1,130,753	908,307	953,157
Fuel usage (KL) (Crude oil equivalent)	30,317	29,173	23,434	24,591
Shipping weight (million tonst)	4.6	4.6	3.9	3.9
Shipping volume (1 million ton-kilograms)	1,504	1,486	1,196	1,239
CO2 emission (metric tons of CO2)	80,700	77,800	62,500	65,800
Unit energy consumption (KL/1 million ton-kilograms)	20.16	19.63	19.59	19.85

Comments

Reducing Fuel Usage by Increasing Shipping Lot Volumes

As promotion themes for applying the Revised Act on the Rational Use of Energy to ships, from an equipment perspective we worked to raise fuel efficiency by adding friend fins to vessels. From a transport perspective, since fiscal 2007 we have endeavored to increase the size of shipping lots. Especially for small-lot shipments of chemical products, we take scheduling, routes and cargo characteristics (such as temperature control and nitrogen inclusion) into consideration when packing lots. Such planning can allow smaller-lot shipments via two vessels to be combined into a single lot shipment on one. By taking such factors into account, we are striving to reduce the amount of fuel used and conserve energy.

In fiscal 2009, by increasing lot sizes we succeeded in reducing fuel usage by an amount equivalent to 1.9% of the total amount of fuel used to transport products by ship. Aggressive efforts have also enabled us to substantially increase high-pressure gas lot sizes. Going forward, we will continue to seek out various methods to increase lot volumes even further.



Makoto Takimoto
Deputy Manager,
Coastal Division,
Marine Business
Department,
Mitsubishi Chemical
Logistics

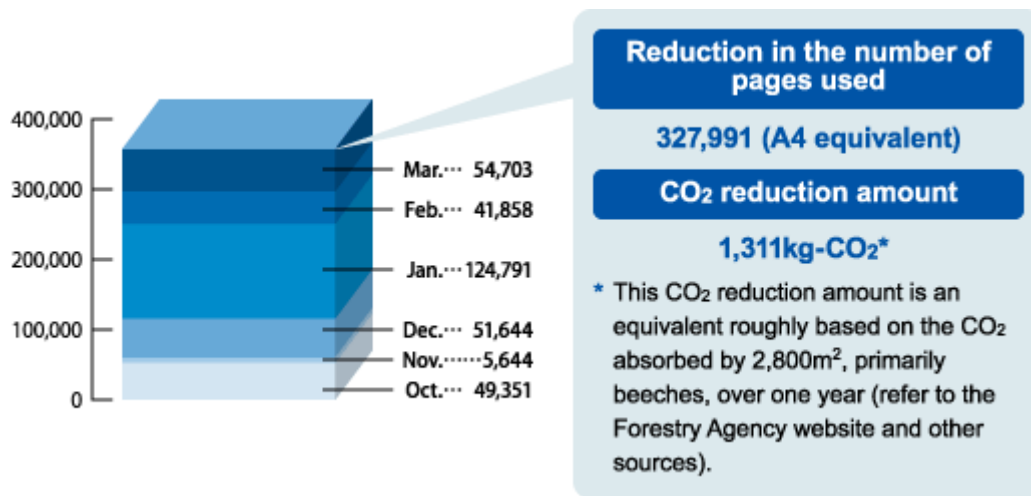
Ongoing Promotion of Energy Conservation Activities at the Office and Home

In fiscal 2009, as part of our initiatives in the home we continued participating in a Mitsubishi Chemical Holdings Group effort that asked employees to keep home environmental accounting records¹. We also seek to foster the environmental education of employees and their families, raising environmental awareness through an internal publication.

As one office initiative, we formed teams comprising members of each department in Mitsubishi Chemical Corporation's head office building. We then encouraged these teams to compete to reduce their usage of printing and copy paper. Over a six-month period, this initiative lowered paper consumption more than 20% year on year. Translated to the amount of CO₂ emitted during paper production, this decrease equates to a CO₂ reduction of around 1,300 kg. In addition, through ongoing energy conservation efforts—such as “Cool Biz” and switching off lights at lunchtime—we reduced power consumption 5% year on year.

¹ Using the Ministry of the Environment's Eco Family system

Accumulated Paper Savings over Six Months



Overall Chemical Substances Discharge Reductions

Steady Reductions of PRTR¹ Overall Discharges Result in 150-Tons Decline Versus Fiscal 2009

Mitsubishi Chemical Corporation is performing and announcing the results of annual studies on discharges (including VOCs²) and transfers of the substances regulated under the PRTR Law and the 480 substances specified by the Japan Chemical Industry Association (JCIA).

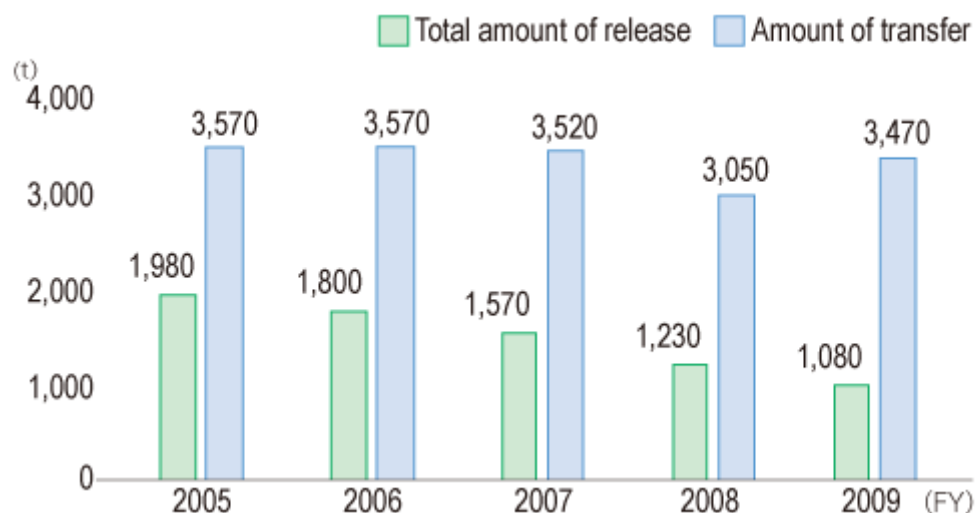
In fiscal 2009, we continued measures to reduce VOC discharge by completing the installation of floating roofs on acetone tanks. As a result, we reduced total PRTR discharge in fiscal 2009 to 1,080 metric tons, down 150 metric tons (12%) compared with fiscal 2008 levels. We have steadily reduced total discharge since fiscal 2005, partly by discontinuing the operation of certain facilities as we revise our business operations.

Measures focusing specifically on substances regulated under the PRTR Law included those to reduce benzene emissions (phase I construction: building an absorption tower) and upgrading the trays on styrene recovery equipment. Through such measures, the Group succeeded in reducing total emissions in fiscal 2009 to around 270 metric tons, down approximately 15% year on year. In fiscal 2010, we will continue our efforts to decrease benzene emissions by embarking on second-stage construction.

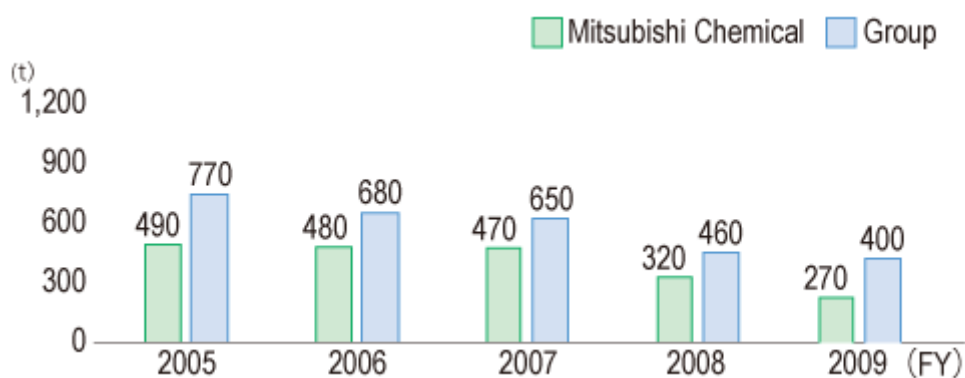
¹ The PRTR (Pollutant Release and Transfer Register) Law requires the collection and disclosure of data indicating the types, volumes, and sources of hazardous chemical substances released into the atmosphere or transferred away from plants as constituents of waste materials.

² 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.

Total Amount of Release and Transfer of Monitored Chemicals (Mitsubishi Chemical)



Emissions of Substances Regulated under the PRTR Law



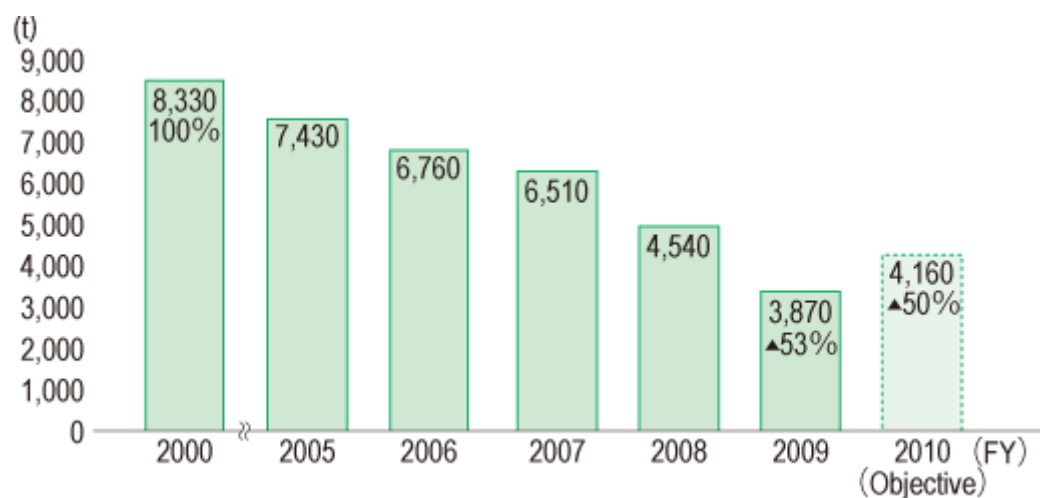
Early Achievement of VOC Emission Reduction Targets

The Mitsubishi Chemical Group is committed to reducing its VOC emissions 50% versus fiscal 2000, by fiscal 2010, by fiscal 2010.

As a result of aggressive efforts to meet this target, in fiscal 2009 the Group's VOC emissions were 3,870 metric tons, a reduction of 670 metric tons compared to fiscal 2008 and a 53% reduction compared to fiscal 2000. This represents the early achievement of our goal to reduce VOC emissions by fiscal 2010.

Major factors contributing to the decrease were lower atmospheric emissions, propylene flare incineration and the introduction of isopropyl alcohol recovery equipment.

VOC Emissions (Mitsubishi Chemical Group)



Waste Reduction and Recycling

Reducing Final Landfill Disposal by Mitsubishi Chemical and the Group

The Mitsubishi Chemical 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 2009, Mitsubishi Chemical produced approximately 135,000 metric tons of waste material, which was 14,000 metric tons or approximately 10% less than fiscal 2008. This resulted mainly from decreased amounts of wastewater, incineration as well as sludge and incinerator ash owing to such factors business reorganization. Our continued promotion of recycling inorganic sludge, incinerator ash and other waste to be used as cement and carbon waste, firebrick scrap, for paving materials enabled us to achieve a 65% recycling rate for waste material, up 1.4% compared to the previous year.

As a result, industrial waste landfill disposals (not including transient construction waste) generated through production activities fell by 1,000 metric tons, to 4,240 metric tons, compared to the previous fiscal year. However, transient construction waste generated through dismantling of facilities and maintenance amounted to around 700 metric tons of landfill disposal. We are continuing our efforts to promote recycling.

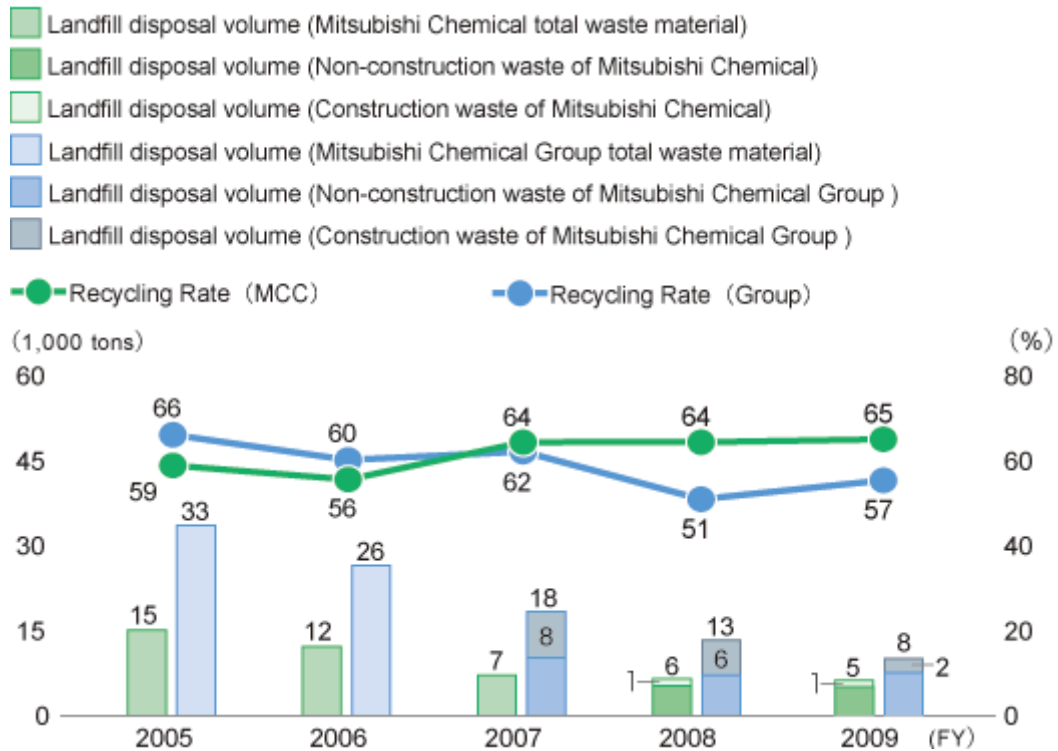
Meanwhile, the volume of industrial waste (including transient construction waste) generated by the entire Mitsubishi Chemical Group came to approximately 290,000 metric tons, which is 9%, or 29,000 metric tons, lower than the previous fiscal year. Furthermore, landfill disposals and the disposal rate were 8,100 metric tons and 2.8%, respectively, achieving a reduction of 5,300 metric tons and around a 40% rate of reduction.

This was primarily due the inclusion of a great deal of construction waste generated by the construction division in groupwide waste material, and as a result of careful consideration of such measures as discretionary recovery when dismantling facilities and selection of the recycler, we were able to recycle 4,000 metric tons of waste material.

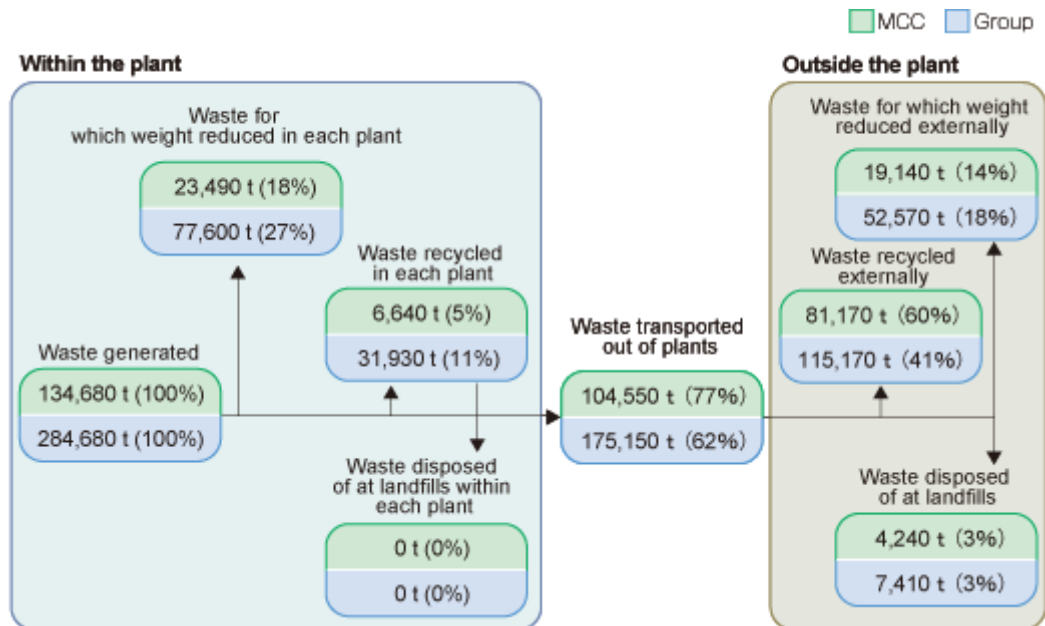
We will promote further efforts toward increasing recycling rates in an attempt to achieve fiscal 2010 zero-emission objectives.

Note: The Mitsubishi Chemical 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%.

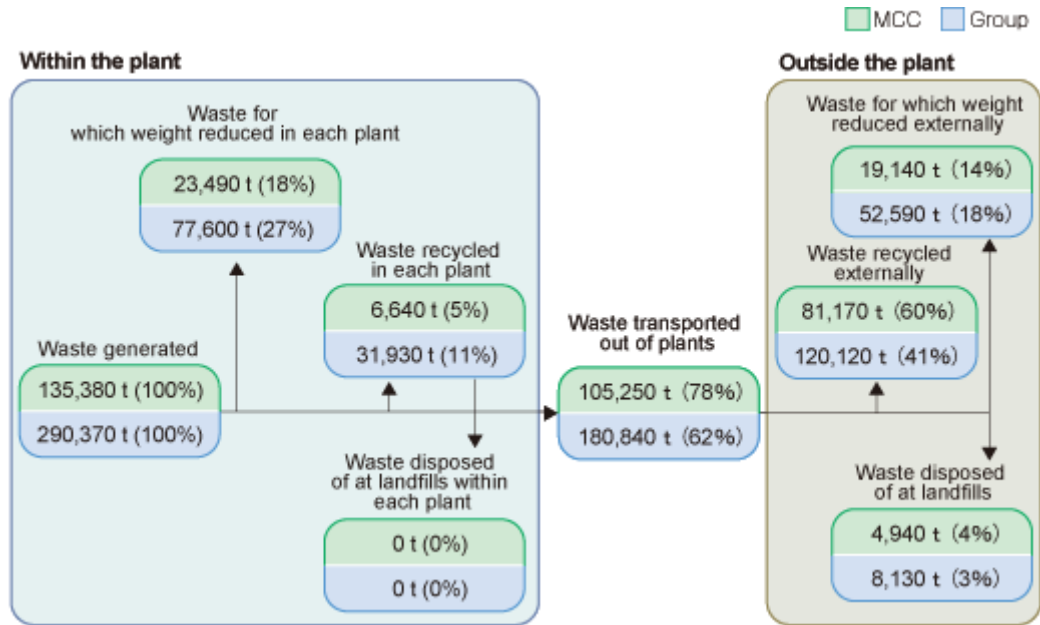
Final Landfill Disposal Volume and Recycling Rate



Waste Processing Flow (not including transient construction waste)



Waste Processing Flow (including transient construction waste)



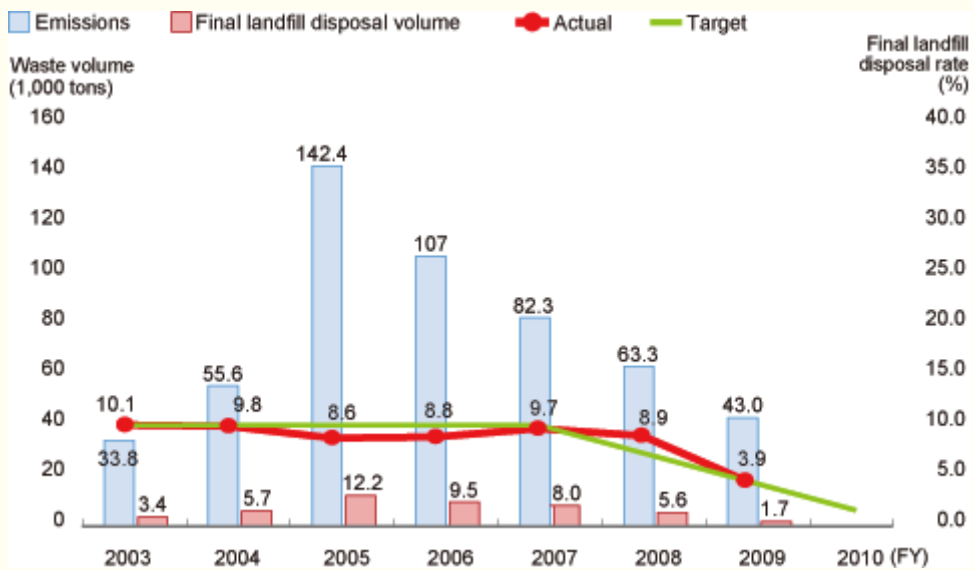
TOPICS

Targeting Zero Emissions from Industrial Waste Generated Through Facility Dismantling and Demolition Work (Mitsubishi Chemical Engineering Corporation)

As well as plant planning, construction and maintenance, Mitsubishi Chemical Engineering Corporation also handles the final stage of the product life cycle—facility dismantling and demolition work—for all firms in the Mitsubishi Chemical Group. As part of our RC activity, we are seeking to achieve zero emissions from industrial waste generated by such works.

In order to raise the recycling rate, when dismantling production facilities we approach the process in such a way that dismantled materials can be separated into the respective raw materials. Valuable resources, such as stainless steel, iron reinforcing bars and steel frames are separated, and concrete from the construction site is processed at the site or taken care of by a contractor to be reused as a crushed-stone material. We entrust lower-volume waste to a disposal contractor as mixed construction waste, selecting only those contractors deemed highly reliable and with high recycling rates. Particularly for large-scale construction projects, in advance of the project we hold a review meeting bringing together quality, environmental and safety personnel to select optimum disposal methods. Further, we are making use of a system we built to aggregate and monitor simply and in real-time the status of waste material and emissions generated by nationwide construction and demolition/dismantling works.

As a result, we were able to bring the fiscal 2009 final landfill disposal rate to below the 4% target.



Comments

Success in Significantly Reducing Landfill Disposals Through Recycling Waste Materials (Mitsubishi Chemical Corporation, Yokkaichi Plant)

The Yokkaichi Plant's fiscal 2008 waste material final landfill disposals were approximately 1,700 metric tons (final landfill disposal rate of 6.2%). In fiscal 2010, to achieve zero emissions with a targeted landfill disposal rate of under 1%, we will need to reduce our landfill disposals to around 200 metric tons.

With this in mind, since fiscal 2007 we have studied how best to recycle the bulk of waste materials usually destined for landfill disposal, which are carbon waste, firebrick scrap, and gypsum from flue gas desulfurization. To deal with these waste materials, we have made many improvements through seeking solutions both internally and externally, addressing many problems to meet the standards expected by the recycler in terms of characteristics, packaging and so on. In particular, advanced technology is required to safely handle the pulverizing of carbon waste and it takes time to select the right recycler. But as a result of such efforts, we now recycle waste carbon into fuel and firebrick scrap and gypsum into paving material.

In fiscal 2009, we managed to reduce final landfill disposals by 1,400 metric tons compared to the previous year, to around 300 metric tons (final landfill disposal rate of 1.6%).

We will continue to further promote recycling as we move toward our goal of achieving zero emissions.

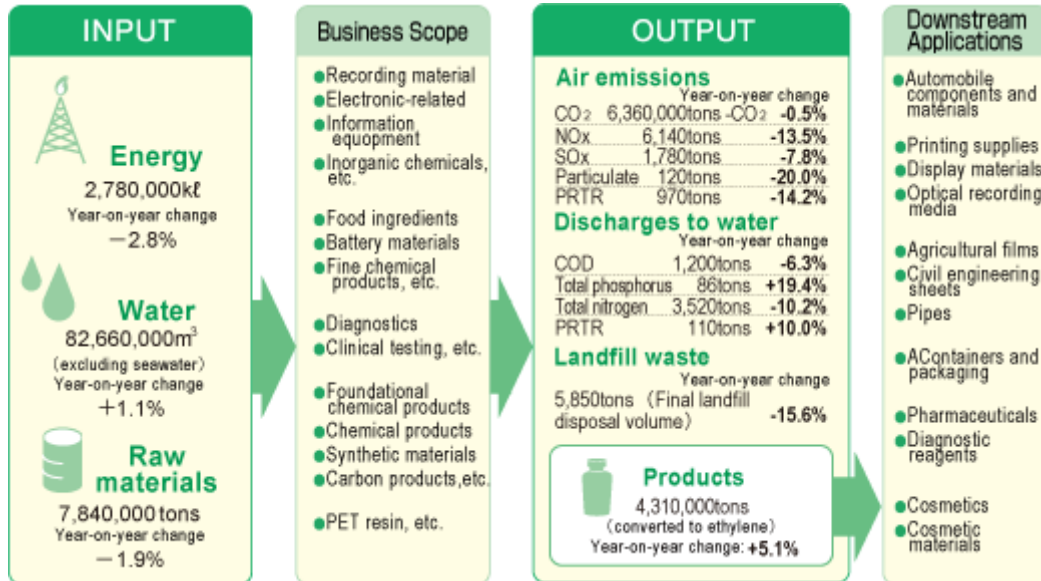


Air Quality Group staff at the Yokkaichi Plant
RC Promotion Department
Front row, from left: General Manager
Toshinori Ichikawa, Kouji Mizutani
Back row, from left: Kanako Hori,
Eiji Tokunaga, Gakushi Nishida

Material Flow

Continuously Identifying and Measuring Material Flows

Mitsubishi Chemical Group is working to identify material flows (resource inputs and environmental load) in order to more effectively reduce its environmental load. Summarized here are Mitsubishi Chemical Corporation's inputs (energy, water, and raw material volumes) and outputs (product production volume, and waste and other emissions) by business area and final application.



[Click here for larger image](#)

Environmental Accounting

Fiscal 2009 Environment and Safety Investments of ¥1.8 Billion and Expenses of ¥28 Billion

In fiscal 2009, the Company's environmental and safety investments totaled ¥1.8 billion. This amount included spending on wastewater and other water quality enhancement measures, cutting VOC and other atmospheric pollutant emissions, waste treatment and global environmental conservation. Principal investment in measures to improve water quality went toward consolidating wastewater outlets, enhancing water resource management and installing water metering equipment to facilitate oversight. Such investment totaled ¥0.5 billion. An additional ¥0.9 billion went toward denitration equipment to reduce atmospheric pollution, the introduction of benzene recovery equipment and the installation of floating roofs on storage tanks. A further ¥0.1 billion was spent on such waste-reduction measures as recycling and treatment equipment repair, and ¥0.3 million went to upgrade specified refrigeration equipment.

Overall expenses were ¥28 billion, down ¥1.6 billion from fiscal 2008. The main reasons for changes in expenses were that plant operation rates were down, owing to large-scale scheduled maintenance, as well as to business restructuring. Such factors caused variable costs to fall ¥1.9 billion. R&D expenditures also fell ¥0.2 billion. Conversely, overhaul-related expenses rose ¥0.5 billion.

In fiscal 2010, we will continue to invest in water pollution countermeasures, including wastewater outlet consolidation, enhanced water resource management and measures to reduce the emissions of atmospheric pollutants.

Fiscal 2009 investments related to safety came to ¥0.3 billion and were concentrated on upgrades to vehicles used for firefighting and convey fire-prevention materials, as well as to update fire hydrant piping. Corresponding expenditures totaled ¥11.9 billion. Expenses incurred for legally mandated spot checks and safety/security were ¥0.3 billion higher than in fiscal 2008.

Investment and Expenditure Relating to Environmental Protection and Safety

(Millions of yen)

Costs of Our Activities Relating to Environment Conservation		2009		2008	
Category	Investment	Cost	Investment	Cost	
Environmental conservation cost to reduce environmental impacts generated in our sites due to our manufacturing and service activities (on-site cost)	1,721	22,583	3,688	23,711	
Breakdown	1. Pollution prevention cost	1,353	15,472	3,429	16,912
	2. Global environmental conservation cost	266	1,345	0	963
	3. Resource recycling cost	102	5,765	259	5,836
Environmental conservation cost in our management activities (environmental management activity cost)	0	1,092	0	971	
Environmental conservation cost in our research and development activities (research and development cost)	0	3,304	0	3,514	
Environmental conservation cost in our social activities (social activity cost)	28	462	154	508	
Cost to address damages to the environment (environmental damage cost)	1	55	38	348	
Other environmental conservation costs (other costs)	0	543	0	588	
Subtotal	1,750	28,038	3,880	29,640	
Costs of Our Activities Relating to Environment Conservation		2009		2008	
Category	Investment	Cost	Investment	Cost	
Cost to comply with safety legislation (safety legislation cost)	270	3,564	174	3,341	
Cost of voluntary risk management for safety (voluntary risk management cost)	39	7,455	28	7,407	
Cost of safety management activities (safety management cost)	0	885	0	862	
Subtotal	309	11,904	202	11,610	
Total	2,059	39,942	4,082	41,250	

[Click here for larger image](#)

Biodiversity Preservation

Considering the Impact of Group Operations on Biodiversity

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 Mitsubishi Chemical Group has a history of conducting ecological surveys and engaging in other forms of protection of the flora and fauna within the grounds of its plants, as well as their surroundings. As a member of the Mitsubishi Chemical Holdings Group, the Mitsubishi Chemical Group upholds the Nippon Keidanren Declaration on Biodiversity¹. In accordance with this pledge, we undertake voluntary and regular actions to minimize the biodiversity-reducing impact of our operations. As the first step of any such effort is to understand the impact that our operations might have on the ecosystem, we employ Corporate Ecosystem Services Review² tools, which were jointly developed by the World Business Council for Sustainable Development³ and the World Research Institute⁴, to evaluate their potential impact throughout the supply chain. We are also considering the application of environmental impact evaluation indices to quantify our impact on biodiversity.

Going forward, while continuing to keep biodiversity conservation at the forefront of our business activities, we plan to evaluate the ecological impact of our products over the entire product life cycle, through lifecycle analysis (LCA). We also aim to adopt a more in-depth approach to activities linked to protecting our ecosystem.

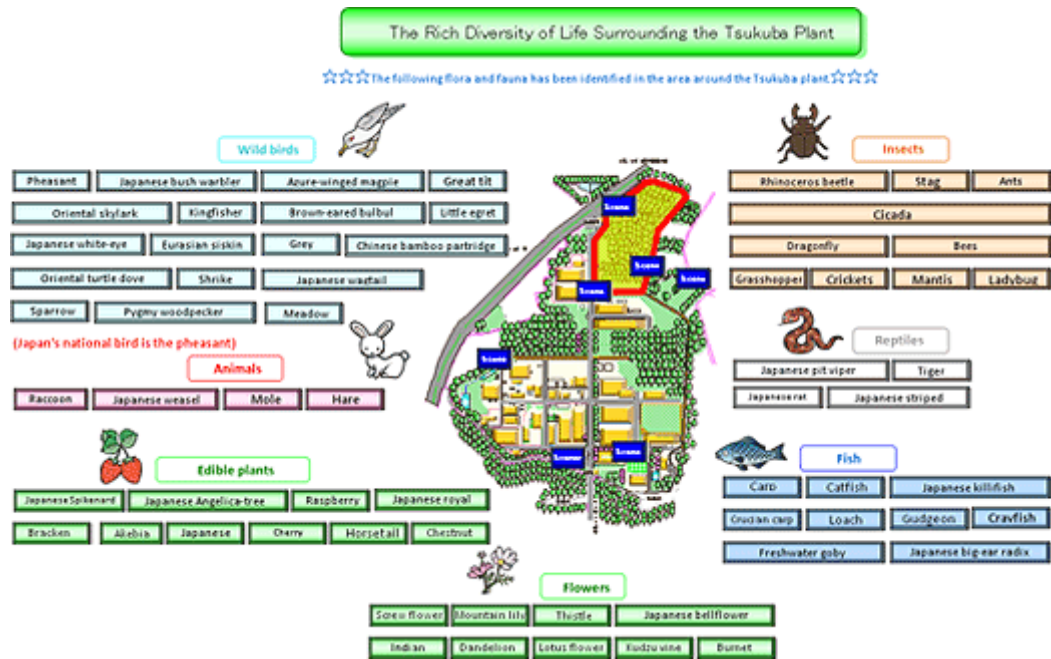
¹ Nippon Keidanren announced its Declaration on Biodiversity in March 2009. This document comprises seven biodiversity-related objectives, such as conducting corporate activities in harmony with the environment and promoting corporate management for sustainable resource use.

² This review provides guidelines for identifying business risks and opportunities arising from ecosystem change. It defines different categories of services, such as provisioning services (food and fresh water), regulating services (atmosphere, climate, etc.) and supporting services, and items can be checked off in accordance with the guidelines to specify risks and opportunities to put strategies into place.

³ Founded on the eve of the 1992 Rio Earth Summit, this council took its current form as an association of private companies in 1995. It brings together some 200 companies drawn from more than 30 countries and 20 industrial sectors with a commitment to sustainable development through economic growth, ecological balance and social progress.

⁴ This environmental think tank, headquartered in Washington, D.C., was founded in 1982.

Ecological Survey at Mitsubishi Chemical's Tsukuba Plant



[Click here for larger image](#)

Note: The flora and fauna survey is based on observations taken since 2000.

Note: The area framed in red was sold to another company in 2004 but has been preserved in much the same condition.

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 strives to prevent quality and product liability problems, and seeks to increase customer satisfaction through the delivery of safe, secure products.

Mitsubishi Chemical 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 Directive¹, RoHS Directive², and REACH regulations³, demands that chemical substances contained in products be properly 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 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. Mitsubishi Chemical is now advancing the fusion of the Green Information Management System with MSDS plus⁴ 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.

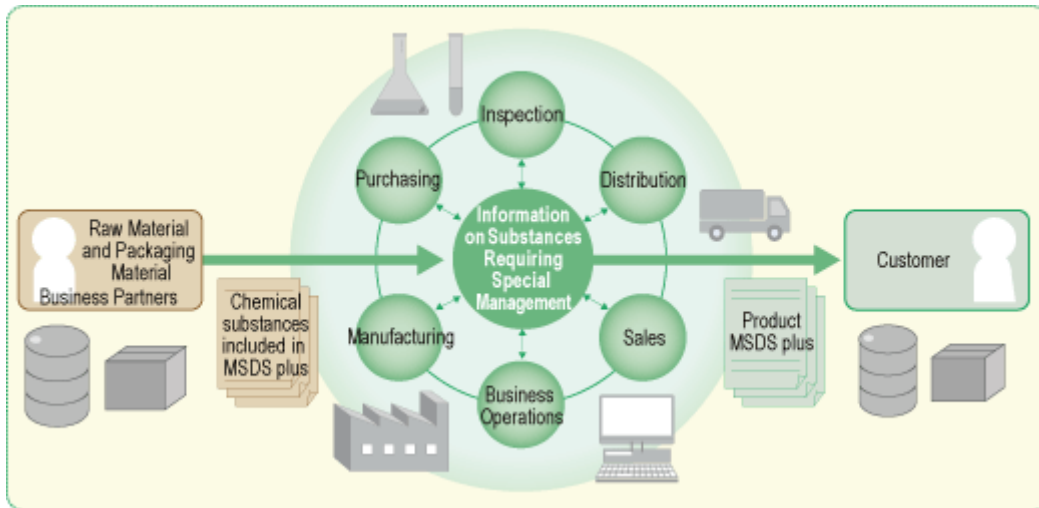
¹ ELV Directive: The EU's "End of Life Vehicles," or ELV, Directive limits the use of certain hazardous substances in automobiles and promotes the smooth recycling of vehicles that are no longer needed. It prohibits the use of heavy metals (lead, cadmium, mercury, and hexavalent chrome), except for those 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 brominated flame retardants (PBB and PBDE). The RoHS Directive took effect in July 2006.

³ Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulations: Regulations to 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 European Union, and placing restrictions on chemical substances requiring risk management, and their uses.

⁴ MSDS plus: 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.

Green Information Management System

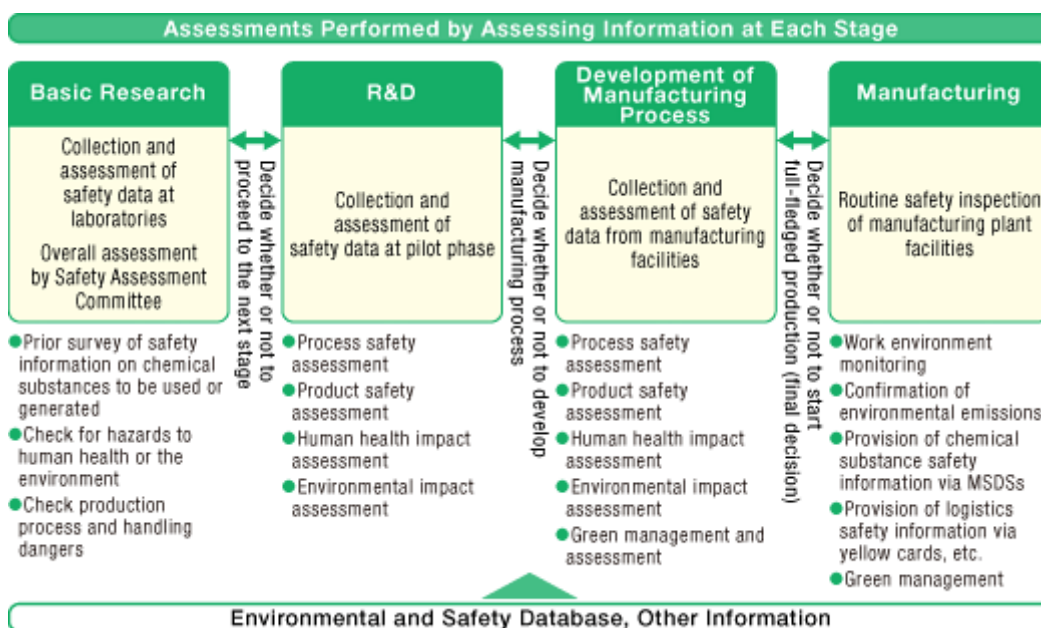


Management of Chemicals

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.

Chemical Substance Risk Assessment Flow in Product Development



Safety Information: Proactive Collection and Appropriate Provision to Customers

The Mitsubishi Chemical 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 Mitsubishi Chemical 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. In fiscal 2008, we introduced a system to create MSDSs automatically and used for revising MSDSs for GHS¹ compliance. The Mitsubishi Chemical Group is also actively participating in the Joint Article Management Promotion-consortium² (JAMP), and using tools like MSDS plus³ created by the Consortium to provide information on chemical substances through the supply chain in tandem with Mitsubishi Chemical's Green Information Management

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.

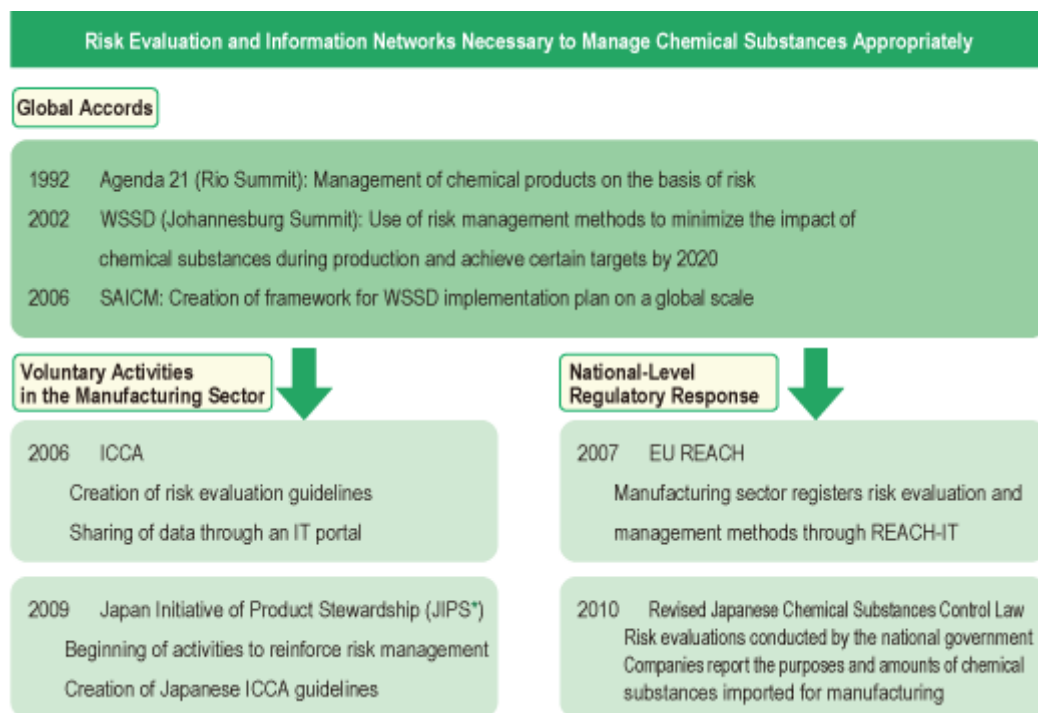
³ MSDS plus is a common safety data sheet used to communicate the chemical substance information to raw material manufacturers, final product manufacturers, and all parties in between.

Aggressively Pursuing International Chemical Substance Management Activities to Reach SAICM Targets

Chemical Substance Management Strategies

The World Summit on Sustainable Development (WSSD), sometimes referred to as the Johannesburg Summit, took place in South Africa in 2002. One outcome of the summit was the agreement to significantly minimize by 2020 the adverse effects of chemical substances on human health and the environment. Specific measures were introduced when the 1st International Conference on Chemicals Management (ICCM), held in 2006, adopted the Strategic Approach to International Chemicals Management (SAICM). In October 2007, the International Council of Chemical Associations (ICCA) formed an organization and began promoting activities targeting energy and climate change leadership, chemical policy and health leadership and responsible care activities.

International Trends in Chemical Product Management



* Japan Initiative of Product Stewardship (JIPS): Voluntary initiative by Japanese manufacturers to promote international product management strategies of the ICCA.

Contributing to ICCA and JIPS Activities

As a member of the ICCA's Global Executive Strategy Group, Mitsubishi Chemical's president and CEO, plays a leadership role in the ICCA. Mitsubishi Chemical is also a member of the Chemical Policy and Health Leadership Group, which plans and conducts lectures and other educational activities designed to raise the ability of developing countries and small and medium-sized businesses to achieve SAICM objectives.

In 2009, the Japan Chemical Industry Association (JIPS) began full-fledged efforts to support voluntary corporate initiatives to conduct risk-based chemical substance management. Mitsubishi Chemical is an active member of this association.

Purpose

The Global Product Strategy (GPS) was developed by the International Council of Chemical Associations (ICCA) as part of its efforts to achieve the objective of the United Nations Strategic Approach to International Chemicals Management program, to minimize the adverse effects of chemical substances by 2020. GPS is a voluntary chemical industry initiative.

Initiatives

- Implement product-centered chemical substance management with the objectives of preventing adverse health and environmental effects through the safe manufacture (purchase), transport, use, consumption and disposal of products.
- Disclose information on chemical substance management and earn the trust of society through the safe management of chemical substances throughout their entire lifecycle.

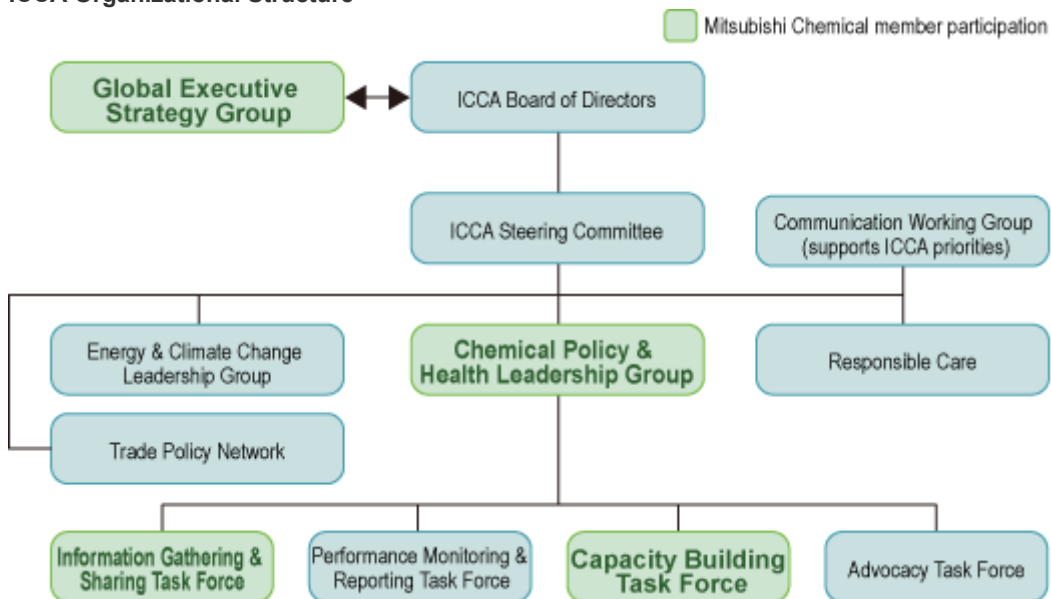
Themes

1. Management of chemicals on the basis of risk
2. Disclosure of information on product risks throughout the value chain



Guidance on risk assessment

ICCA Organizational Structure



Commencement of Risk-Based Voluntary Chemical Substance Management Activities

As well conforming to REACH regulations and revised legislation, on a voluntary basis Mitsubishi Chemical has begun evaluating the chemical substances incorporated in its products. We manage chemical substances based on these results, which we disclose, along with our global product strategy, which includes management methods. We plan to provide the information that we gather and prepare in line with these efforts through REACH, as appropriate. We collaborate with ICCA and JIPS in these efforts.

Compliance with EU REACH Regulations

The European Union's REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulations define standards for risk management and information sharing in relation to chemical substances, based on the evaluation of such risks, by all manufacturers, importers and downstream users of chemical substances in the European Union.

The first stage of these regulations involves registration. Information on hazardous substances is incorporated into technical documents, and risk evaluations are prepared, outlining management methods that take into account the use and purpose of chemical substances. Such activities are carried out on a cooperative basis among companies registering the same chemical substances. The Mitsubishi Chemical Group places priority on holding and communicating with the Substance Information Exchange Forum (SIEF) and the sharing of information throughout its supply chain.

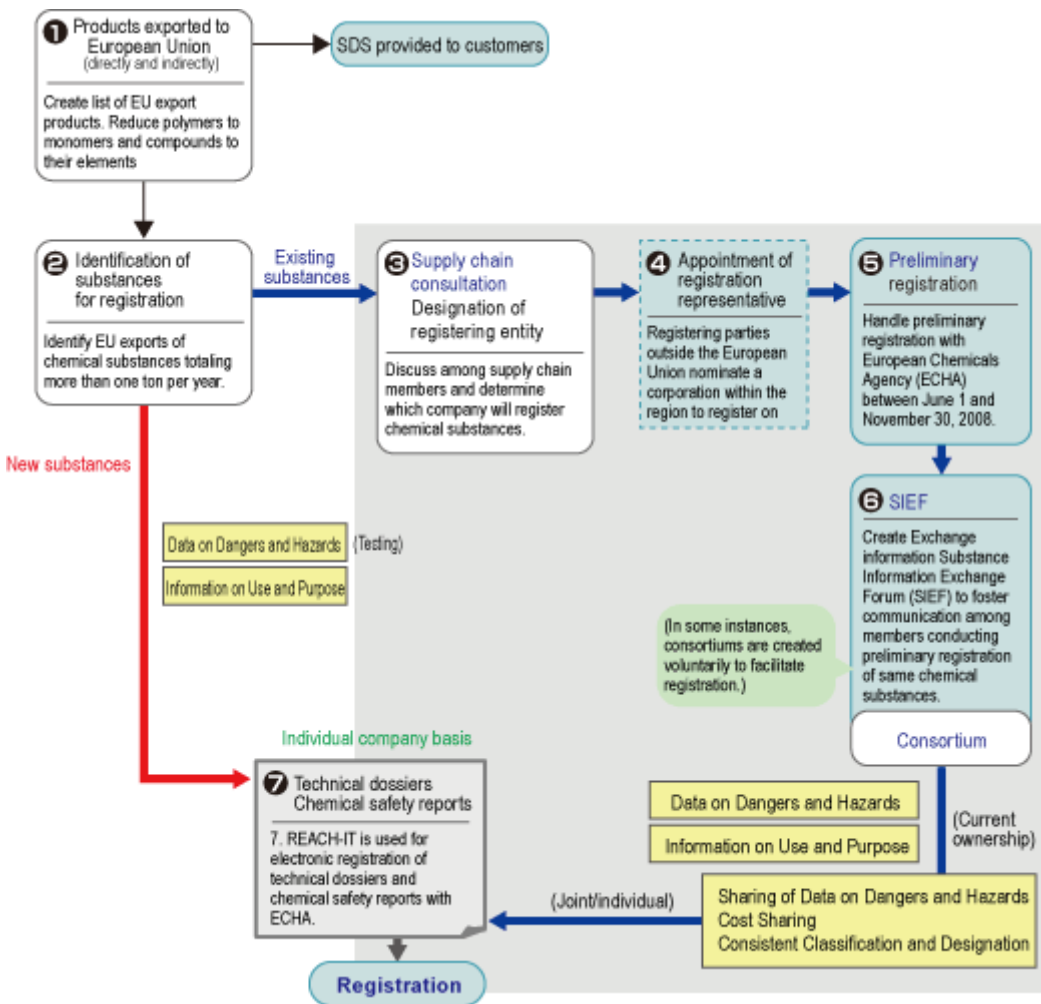
1. Holding and Communicating with the SIEF

All companies that register the same chemical substances are required to convene and maintain communications with the SIEF. By maintaining close communications with the representatives it has appointed to register such substances, Mitsubishi Chemical participates in SIEF formulation and takes an active role in associated technical discussions.

2. Exchanging Information Throughout the Supply Chain

Mitsubishi Chemical believes that rationally and efficiently gathering information from its customers on the usage and purpose of chemical substances is key to its efforts to conform to regulatory requirements. Initially, we had no experience in transmitting such information from the downstream to the upstream members of our supply chain, and no public guidelines or tools were available to facilitate this process. We therefore created our own explanations outlining the items required by the REACH regulations. On this basis, we share information on chemical substance usage and applications throughout the supply chain and solicit such information from our customers.

Flow of Activity Resulting in REACH Registration



[Click here for larger image](#)

- 1 ECHA: European Chemical Agency
- 2 SIEF: Substance Information Exchange Forum

Together with Customers

Basic Ideas

The Mitsubishi Chemical Group believes that all its products and services must meet 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 appropriate solutions.

Fiscal 2009 Targets, Performance and Future Themes

Category	Fiscal 2009 Targets	Fiscal 2009 Performance and Themes
Quick and appropriate response	<ul style="list-style-type: none"> Acquire information on the Group and its surroundings, and make improvements on the basis of this information. Enhance databases on Group products, quickly revising or deleting data as appropriate. 	<ul style="list-style-type: none"> Participated in tradeshow and seminars, and created learning opportunities by holding study sessions Updated Group product databases
Disclosing information to customers	<ul style="list-style-type: none"> Update the website to reflect detailed product information on specific fields. 	<ul style="list-style-type: none"> Provided timely information updates on products Discussed areas for future enhancement

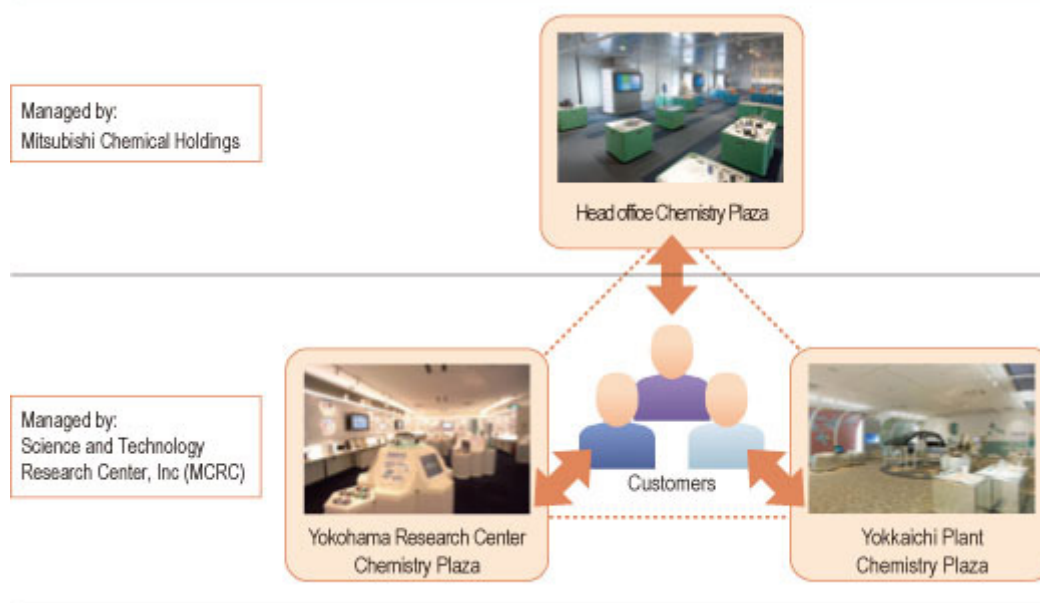
Promoting Dialog via Chemistry Plazas

In early 2007, the Mitsubishi Chemical Holdings Group created within its head office building the Chemistry Plaza—a showroom designed to foster an overall understanding of the Group's activities by introducing its products, operations and technologies, as well as their applications. The plaza showcases a host of products and technologies from the Group's four core companies: Mitsubishi Chemical, Mitsubishi Tanabe Pharma, Mitsubishi Plastics and Mitsubishi Rayon, and introduces the overall capabilities and organizational aspects of the Group.

Mitsubishi Chemical also operates two Chemistry Plazas of its own. One of these is a showroom at the Yokohama Research Center that introduces fundamental and future technologies, taking a research-oriented approach. Similarly, we have a showroom at the Yokkaichi Plant that focuses on the introduction of resin-based products and technologies.

In addition to cooperating on common themes, the Chemistry Plazas each take distinctive approaches in helping to resolve issues that customers face.

Network of Solutions for Resolving Customer Issues Chemistry Plaza



Information Center in Operation Since 2002

In 2002, we became the first Japanese comprehensive chemical manufacturer to establish an information center. We set up the center to facilitate our response to customer demand concerning products and technologies.

Each year, the center handles an increasing number of inquiries. In fiscal 2009, the center handled 7,500 inquiries (total via telephone and website).

Roles of the Information Center

- Respond to inquiries swiftly and accurately
In addition to responding to inquiries swiftly, when detailed information is needed the center provides such information after communicating with appropriate departments.
- Accumulate, analyze and share information on inquiries
The center maintains an inquiry database, representing the accumulation of inquiries and corresponding requests and opinions. The center shares this information with related departments. The center also analyzes this information to determine customer needs.
- Disseminate product information to customers
We have created a cross-searchable website containing some 3,500 products offered by around 70 Group companies. The Information Center has also created category-specific websites to facilitate broad-based dissemination of product information.

Together with Business Partners

Basic Policies

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 Group.

Mitsubishi Chemical's basic stance is to consider the companies with which it interacts operationally as its business partners. We seek to foster a sense of mutual trust, and we work with our business partners to achieve mutually sustainable growth. Furthermore, we have established purchasing guidelines to ensure that transactions are fair and equitable.

Fiscal 2009 Targets, Performance and Future Themes

Category	Fiscal 2009 Targets	Fiscal 2009 Performance and Themes
Ensuring free, fair and open transactions	<ol style="list-style-type: none"> 1. Comply with the Subcontractor Act 2. Revise purchasing guidelines 	<ol style="list-style-type: none"> 1. Held briefings and audited plant purchasing units 2. Revised purchasing guidelines to ensure that they are fair and equitable and incorporate CSR considerations
Promoting CSR procurement	Prepare for full-fledged commencement of CSR procurement	Surveyed examples from other companies and considered method of implementation

Purchasing Guidelines (Excerpted)

Principles

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

Codes of Conduct

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

Requests for Suppliers

1. Compliance with laws, regulations, and social norms
We request each business partner to comply with the following laws, regulations and social standards, in all countries and regions in which they operate.
 - (1) Compliance with laws and regulations concerning the manufacturing and distribution of raw materials.
 - (2) Compliance with laws and regulations concerning labor, health, and safety, and development of proper working environments.
 - (3) Prohibition of racial and sexual discrimination, and respect for the dignity of each employee.
 - (4) Prohibition of bribery and unfair proceedings.
 - (5) Compliance with environmental laws and regulations.
2. Promoting sound business management
3. Consideration for the environmental issues
4. Non-disclosure of confidential information

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

Thorough Compliance with Subcontractor Act

In April 2008, Mitsubishi Chemical drew up and began conducting transactions in accordance with the Subcontractor Act Compliance Rules. In addition to clarifying a structure to ensure compliance, the rules concretely define business process items involving responding appropriately to the spirit of the Subcontractor Act, and ordering and payment issues to be observed and followed.

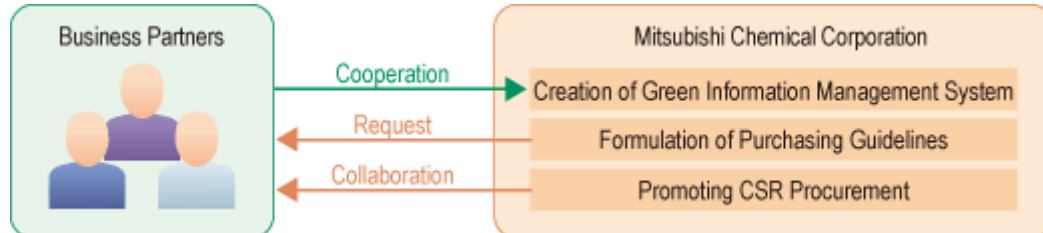
In fiscal 2009, we met four times with purchasing divisions and headquarters departments to ensure thorough entrenchment of the Subcontractor Act Compliance Rules. We also conducted audits of plant purchasing departments to confirm their understanding of the Subcontractor Act. In fiscal 2010, we also plan to hold briefing sessions and conduct audits to ensure compliance.

CSR Procurement

Mitsubishi Chemical is cooperating with its business partners to promote CSR in the interest of helping to create a sustainable society. One aspect of these efforts is the Green Information Management System that we created in 2006. The purpose of this system is to manage and communicate information on chemical substances contained in our products.. In 2006, we also drew up purchasing guidelines that are designed to ensure fair and equitable relationships with business partners. These guidelines also call for the promotion of CSR initiatives on the part of our business partners.

In fiscal 2009, we continued working toward the full-fledged introduction of CSR procurement by gathering information and considering specific implementation methods. In fiscal 2010, we plan to hold briefing sessions to explain our own stance with regard to CSR and request that they promote CSR activities. In addition to asking business partners to conduct voluntary CSR checks, we plan to gauge the status of CSR implementation in the supply chain.

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



Rally Targeting Scheduled Safety Maintenance

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 Mitsubishi Chemical 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

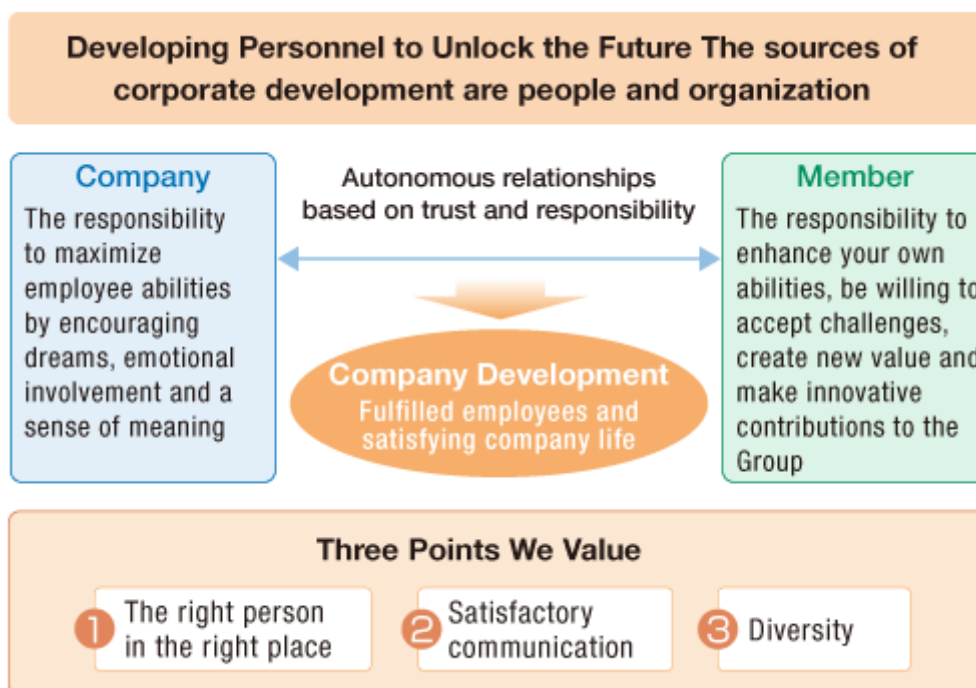
Together with Employees

Basic Policy

In November 2008, our president announced the Mitsubishi Chemical Group's Basic Thinking on Personnel Policies, which has become the basic guideline for initiatives conducted by Group human resources department.

These guidelines promote personal development and the creation of a positive organization and culture for ongoing corporate development. They aim to forge an autonomous relationship between the Company and its employees based on trust and responsibility, with each party recognizing the importance of meeting their respective responsibilities. These guidelines focus on putting the right person in the right place, ensuring satisfactory communication and achieving diversity. In accordance with this basic concept, the Mitsubishi Chemical Group will pursue corporate development by considering and executing human resource measures and fostering satisfaction and fulfilling lifestyles among all employees.

Basic Thinking on Personnel Policies



Fiscal 2009 Targets, Achievements and Future Issues

Item	Fiscal 2009 Targets	Fiscal 2009 Achievements and Issues
Initiatives to protect human rights	1. Ensure further understanding, recognition of <i>buraku</i> discrimination and prevent it 2. Conduct human rights survey and training at overseas Group companies 3. Address human rights issues involving women—create a workplace in which women can participate 4. Prevent sexual and power harassment Conduct vigorous initiatives focused on these priority issues	<ul style="list-style-type: none"> • Held Group training sessions (including sessions targeting senior management, executive, and all employee levels, as well as follow-up training) • Provided human rights e-training (web-based) • Conducted human rights surveys at Group companies in India • Held human rights awareness slogan contest and other activities Fiscal 2010 marks the 30th year of human rights activities, and will include initiatives focused on the (1) further understanding, recognition of the <i>buraku</i> discrimination and prevent it (2) understanding and prevention of sexual and power harassment
Promotion of human resource cultivation	Thoroughly introduce necessary human resource cultivation policies while curtailing costs given management risk scenario	<ul style="list-style-type: none"> • Conducted all necessary training while curtailing costs • Closed the Tsukuba Creation Center; conducting training instead at the Tokyo Training Center • As part of our ongoing efforts to adapt training to changing needs, we have adopted a training approach focused on helping employees achieve growth in practical terms.
Promotion of diverse human resource activities	Based on the recognition that further promotion of participation by women, people with disabilities and foreigners contributes to corporate development, plan and execute various activities	Conducted training for female employees in all areas <ul style="list-style-type: none"> • Confirmed views of female employees, conducted questionnaire targeting female employees on the regular employment course, with the aim of incorporating such responses in future measures • Maintained high ratio of disabled employees concentrated primarily at Kasei Frontier Services • Continued efforts to hire foreigners directly from overseas colleges, as well as promising students from abroad studying in Japan
Work-life balance	Initiatives to curtail the increase in the amount of work performed outside business hours to realize a balance between work and lifestyle	Investigated case studies from other companies, considered other methods
Realize independent career formation and optimal placement	Support employee efforts to define their own career paths by developing systems (in-house application, in-house intern and FA systems) that enable employees to voice their wishes relating to work type and duties	Attempt further developments

Item	Fiscal 2009 Targets	Fiscal 2009 Achievements and Issues
Maintain favorable relationship between labor and management	Maintain or strengthen the relationship and enhanced communication between labor and management	Achieve vitalization in communications between labor and management through innovations in how management committee meetings are conducted.

Proactive Promotion of Human Rights Education and Information Programs in Our Aim to Become a Comfortable and Spiritually Rich Corporate Group

Aiming for a comfortable and spiritually rich corporate group, since 1980 the Mitsubishi Chemical Group has proactively engaged in education and information programs to correctly understand and deepen the awareness of human rights issues.

In fiscal 2009, we promoted activities based on four priority issues for the Company.

1. Ensure further understanding, recognition of *buraku* discrimination and prevent it
2. Conduct human rights survey and training at overseas Group companies
3. Create a workplace in which women can participate
4. Prevent sexual and power harassment

We conducted a survey on human rights status and held training sessions at Group companies in India.

Human rights training included senior management- and executive-level personnel. We also conducted programs for all employee levels, follow-up training and in-house instructor training programs, and programs for employees in charge of various tasks. In fiscal 2009, we held a total of 328 training sessions, attended by 10,930 employees. In addition, we conducted human rights e-training for 13,930 employees using our Company intranet.

Human rights awareness activities include a human rights awareness slogan contest. Held in conjunction with Human Rights Week in 2009, this contest attracted 16,251 entries from employees and their families. The winning slogans were entered in a contest held by the Industrial Federation for Human Rights, Tokyo, and two submissions received honorable mention in the Family category.

We also designated certain personnel as human rights counselors, meaning that they are assigned to handle inquiries and complaints at all Mitsubishi Chemical Group offices in Japan, ensuring prompt and appropriate responses to requests for consultation involving discrimination or harassment.

In fiscal 2010, which marks 30 years since the Mitsubishi Chemical Group began taking part in human rights initiatives, we will reset our activities. We have designated as priority issues initiatives to (1) better understand and recognize *buraku* discrimination and prevent it and (2) understand and prevent sexual and power harassment.

Human Rights Promotion Guidelines (Preamble)

In accordance with the Mitsubishi Chemical Holdings Group Corporate Ethics Charter, the Mitsubishi Chemical Group, in recognition of the importance of human rights education and as a corporate social responsibility, aims to promote within the Mitsubishi Chemical 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 Guidelines.

Human Rights Promotion Policy

The Mitsubishi Chemical 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 Guidelines, offers employees a healthy, productive work environment, and is a magnanimous organization recognized by society.

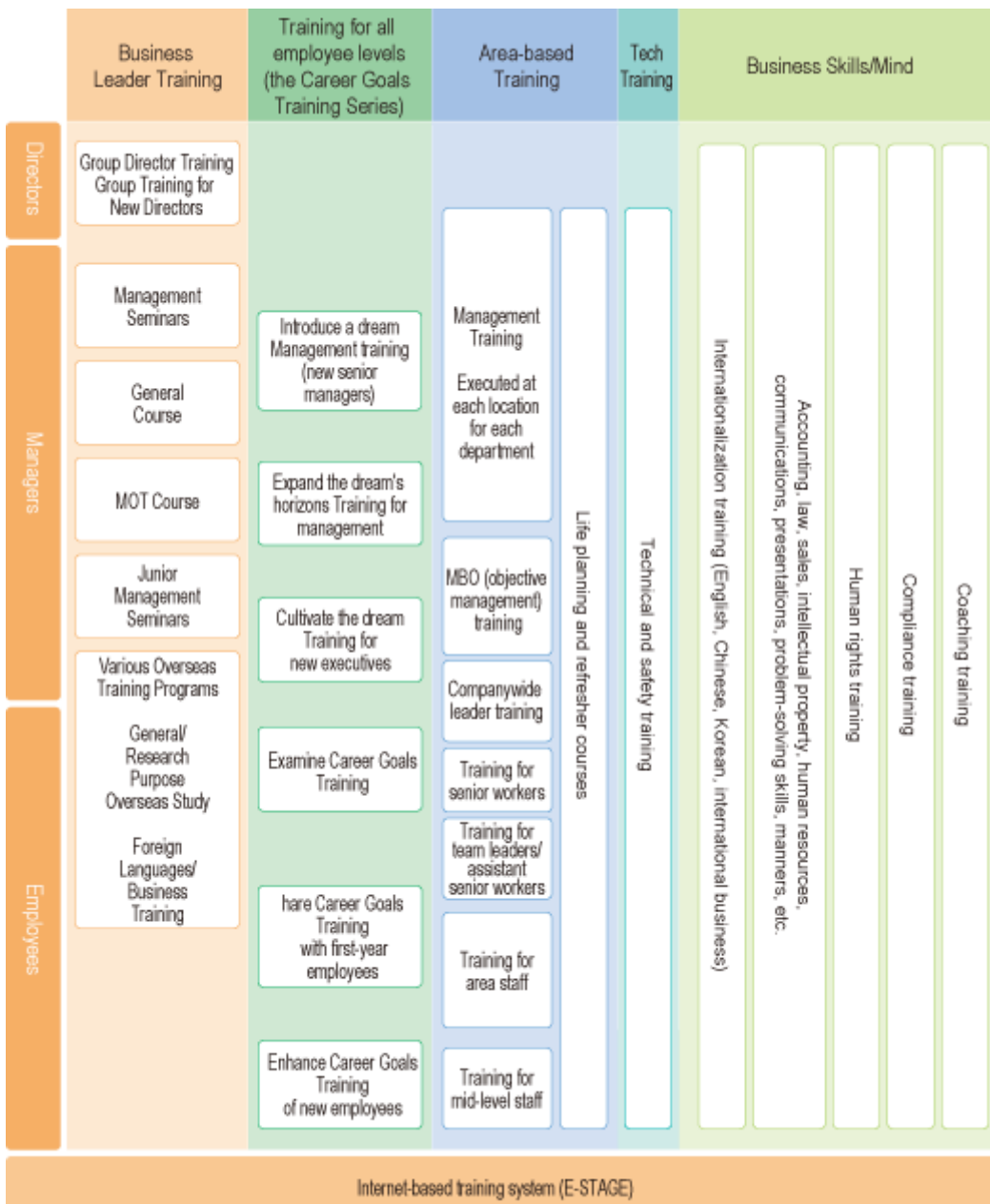
Cultivating Human Resources in a Severe Operating Environment

The Mitsubishi Chemical Group recognizes that highly skilled personnel are essential to its corporate development. Even while facing the challenges presented by a severe operating environment, the Group cultivates human resources on an ongoing basis, thereby sowing the seeds to ensure future development.

Cultivating human resources does not end with training, but involves achieving goals by putting into practice what is learned by carrying out one's duties. After training is conducted, the effects are measured and reflected in the planning and execution of future training sessions.

In fiscal 2009, despite efforts to reduce costs amid the severe operating environment, we conducted ongoing programs for all employee levels, known as the Dream Training Series, new training sessions aimed at strengthening frontline worksite professional skills and career training sessions aimed at heightening the participation of female employees in the workplace. In addition to these activities, in fiscal 2010 we plan to conduct successive human resource training sessions focused on the cultivation of global business personnel, enhanced support for the cultivation of middle management and better cohesion between personnel and business strategy.

Skill Training Programs



Support for Globalization

Mitsubishi Chemical encourages globalization by conducting internationalization training—including study abroad and foreign business training—as international experience helps equip personnel to handle business overseas. In addition to the proactive employment of international students, we hire directly from universities overseas. International personnel with diverse worldviews, flexible ideas and global communication skills play active roles in our sales, R&D and other sections.

Company representatives visit overseas offices, where they conduct surveys into the status of human rights and provide human rights training for employees stationed there. By emphasizing the importance of human rights in this manner, we seek to foster the understanding and heighten overall awareness of human rights issues.

Internationalization Training

- Study abroad
General, short-term language, research and specialized short-term study abroad
- Foreign Business Training
One year of work experience at an overseas company
- English/Chinese-language classes
- Education in a foreign culture
Training to teach the processes and increase the awareness and expertise needed to foster relationships in a workplace featuring people from different cultures
- Skill level-based training
Presentations, negotiations and other skill level-based training

Human Rights Training Implementation Status

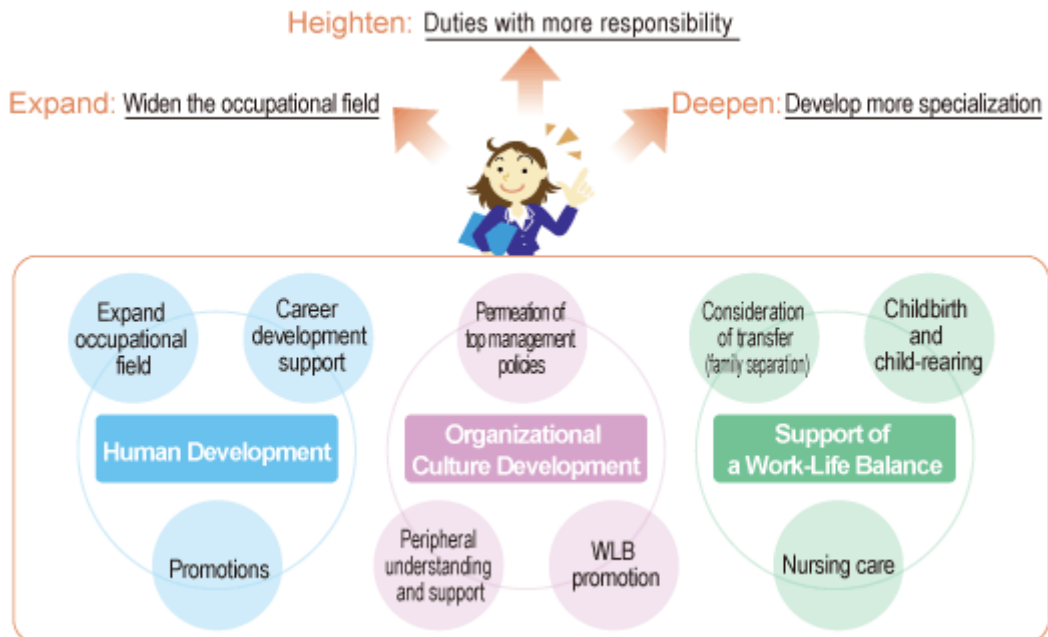
- Fiscal 2007: United States, Taiwan
- Fiscal 2008: China, Thailand, Malaysia, Indonesia, Singapore
- Fiscal 2009: India
- Fiscal 2010: Germany, United Kingdom (scheduled)

Supporting the Participation of Female Employees

The Women's Initiative & Work Innovation (WIN-WIN) Plan was formulated to achieve the objectives set forth in the Mitsubishi Chemical Group's fiscal 2009 Basic Thinking on Personnel Policies. The objectives include promoting the participation, fully exercising the capabilities, and supporting the ambitions and positions of female employees of the Mitsubishi Chemical Group, while providing meaningful work activities.

Based on this plan, we will continue to provide support that is needed from the perspectives of developing our people and our organizational culture and improving the work-life balance.

Women's Initiative & Work Innovation (WIN-WIN) Plan



Supporting Skills Development for People with Disabilities

Since the establishment of special subsidiaries in 1993, the Mitsubishi Chemical Group has promoted the adjustment of working environments based on the concept of normalization in support of growth for people with disabilities through the responsibility of work that contributes to society. At present, we employ approximately 150 disabled employees at our special subsidiaries.

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

Special Subsidiaries

Purpose: To create workplaces where each individual can work enthusiastically.

Name: Kasei Frontier Service, Inc.

Main Business: Information processing services, printing, outsourced business from Mitsubishi Chemical

Locations: Headquarters (Mitsubishi Chemical Kurosaki Plant), Yokkaichi Office (Mitsubishi Chemical Yokkaichi Plant)

Employees: 126 (of whom 82 are disabled (as of April 1, 2010))

Breakdown: 56 employees are severely disabled, 26 have minor disabilities

Awards and Recognition: 2006 Minister of Health, Labour and Welfare Award (disabled employment promotion month poster)

Bronze medal in the 7th International Abilympics in 2007 (English word processing)

2010 Minister of Health, Labour and Welfare Award for outstanding employer of people with disabilities

Promotion of a Work-Life Balance

The Mitsubishi Chemical Group aims to be a true supporter of the work-life balance of its employees. To this end, we employ a flextime system, encourage employees to use their paid holidays, and support childcare and nursing care—efforts designed to create a corporate culture in which it is easy to work.

We have always encouraged the use of annual paid vacation, and our regular employees take advantage of nearly 80% of the vacation time provided to them. In 2006, as part of our effort to promote the use of paid vacation we introduced a life support holiday system. This allows employees to combine their annual vacation with specially awarded vacations to take extended leaves from work.

In fiscal 2009, the president issued a message designed to curtail the amount of work performed outside business hours, and we engaged in initiatives designating “no overtime day” and “no meetings week” to revise the way our employees work. As a result, the amount of work performed outside business hours, which had been on the rise in recent years, decreased.

We will continue to engage in initiatives to realize an even better work-life balance for our employees so that they will continue to work with enthusiasm.

	2007	2008	2009
Paid vacation (Days)	14.3	14.7	13.4
Usage	69.1%	69.3%	63.2%
Maternity leave (People)	35	39	44
Childcare leave (People)	52	60	82
Nursing care leave (People)	3	3	0

Supporting Employee Voluntary Career Formation to Realize Optimal Placement

In addition to standard changes in personnel and inter-departmental rotations, Mitsubishi Chemical has instituted an in-house application system that enables employees to voice their wishes concerning work type, duties and career paths. In accordance with societal advances, intensifying competition and the development of IT technology in the workplace, this system enables in-house career changes. By providing a mechanism that enables employees to develop specialties and change functions according to personal wishes, the system helps to improve organizational vitality, bolster workforce diversity and cultivate human resources.

Fiscal 2009 marks five years since we created our in-house application system. In this time, more than 300 positions were announced, about 200 employees applied for positions and more than 70 employees moved to their desired positions.

Also, in 2008 we introduced an in-house intern system that enables employees to gain experience through temporary positions in other departments. As of March 31, 2010, eight employees were taking advantage of this opportunity.

In addition, since 2007 three employees have made use of the in-house FA system to offer their career and skill set for rotation to the department of their choice.

Furthermore, in 2006 we began a career counselor system that many employees have used to receive advice on their career options.

Creating Favorable Labor-Management Relations

Mitsubishi Chemical, which consists of a head office (including branch offices) and production sites in Kurosaki, Yokkaichi, Naoetsu, Mizushima, Sakaide, Kashima, Nagoya, Tsukuba and Odawara, interacts with local labor unions organized under the Mitsubishi Chemical Labor Union Federation. This federation develops activities based on the principle of working harmoniously with corporations. Mitsubishi Chemical and its labor union enjoy amicable relations based on mutual trust.

Group companies including Mitsubishi Chemical Logistics Corporation and Mitsubishi Chemical Engineering Corporation also house employee-organized labor unions that ensure favorable labor-management relations.

In 2009, discussions at management and labor committee meetings resulted in franker exchanges of ideas than at any time in the past through innovations in how management committee meetings are conducted. We will continue to facilitate close communications between labor and management in our efforts to build a vigorous organization.

Social Contributions

Basic Policy

The Mitsubishi Chemical 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 developing education for children, global environmental conservation, scholarship and support for social education, culture and the arts. Also, Mitsubishi Chemical supports employee volunteer activities through the establishment of volunteer leave and other systems.

Contributing to Sports Development and Supporting Talented Athletes

Mitsubishi Kagaku Media participates in activities conducted by athlete support organization BLUETAG as part of its contribution to the development of sports.

BLUETAG's sports promotion business involves providing a portion of the revenue generated from sales of sports and supplemental products to fund athlete activities. Mitsubishi Kagaku Media, which cosponsors BLUETAG activities, registered as a supporting member in May 2008. Through BLUETAG, they support talented athletes so that they may focus on competing.

Mitsubishi Kagaku Media's dedicated BLUETAG site (Available only in Japanese)
<http://athletes.mcmedia.co.jp/>



Supporting Young Designers through Competitive Awards

Since fiscal 2006, Mitsubishi Chemical has been helping to sponsor Mitsubishi Chemical Junior Designer Award, Japan's only competitive awards for graduation design projects, which aims to contribute to the promotion of design and support young designers. The objective of the award ceremony is to introduce the discovery of promising young designers to the wider world.

In fiscal 2009, 282 projects were submitted and 14 received special recognition.

Visit Mitsubishi Chemical Junior Designer Award
<http://www.m-kagaku.co.jp/mclda/> (Available only in Japanese)



Contributing to Human Resource Cultivation at a Saudi Arabian Technical Training School

The Higher Institute for Plastics Fabrication (HIPF), established in 2007 in a suburb of Riyadh, employs a former Mitsubishi Chemical employee as a lecturer. HIPF is Saudi Arabia's first large-scale technical school, where instruction is given on plastic process technology using powerful new molding machines that shape such plastics as polyethylene and polycarbonate.



Saudi Arabia, which has a population with a high percentage of young people, has prioritized the expansion of employment opportunities for young people, and HIPF was established to help achieve this goal. By dispatching Mitsubishi Chemical veterans to HIPF, we cultivate the development of the young operators needed in the Saudi Arabian plastic processing industry.

Promoting Activities that Nurture Curiosity in Science

The Mitsubishi Chemical Group develops various activities that make use of Group products and technology help children experience the fun and interesting aspects of science.

Participation in the Youngsters' Science Festival (Mizushima Area)

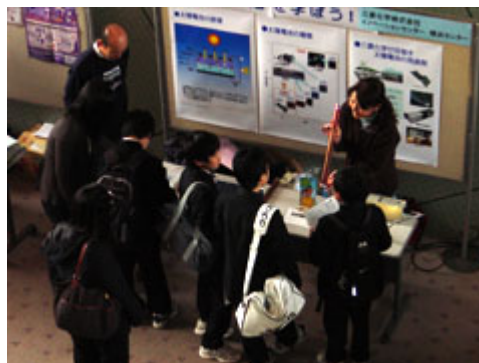
Mitsubishi Chemical Mizushima Plant, Group company TM Air Co., Ltd, and MC Humanets Co., Ltd, participated in a Youngsters' Science Festival held in Kurashiki, Okayama Prefecture in November 2009. The objective of this festival was to convey the fascination of science to young people as part of a national event to promote science education.



In addition to holding classes on how to make homemade soap and create batteries using charcoal, Mitsubishi Chemical conducted experiments enabling participants to experience ultracold temperatures (-196 degrees celsius) in collaboration with TM Air Co., Ltd. MC Humanets also held classes that conducted the Cartesian diver experiment.

Workshop Held at Children's Eco Forum (Yokohama Area)

In February 2009, at the 4th Annual Children's Eco Forum held in the city of Yokohama auditorium, the Mitsubishi Chemical Innovation Center held a workshop on photovoltaic modules. The children were especially surprised at the thinness of the modules. at the workshop.



Traveling Science Classroom Visits Elementary Schools (Kashima Area)

Each year, Mitsubishi Chemical's Kashima Plant hosts a traveling science classroom involving interesting experiments designed to convey the fun of science to children at nearby elementary schools.

In fiscal 2009, the 10th year of this program, the traveling classroom visited four schools in January and February. Researchers from the Kashima Plant led experiments demonstrating atmospheric pressure and showed how to make portable chemical heating pad to the delight of all in attendance.



Chemical Experiment Classroom at the Chikuzen Kurozaki Shukuba Festival (Kurozaki Area)

Mitsubishi Chemical's Kurozaki Plant held a chemical experiment classroom for children at the Chikuzen Kurozaki Shukuba Festival in October 2009.

In experiments led by R&D personnel, children made "slime" and fragrances using materials that our Group produces. . These activities were popular enough to generate long lines of eager onlookers.



Beautification and Environmental Conservation Activities Near Business Offices

As a member of the regional communities where we do business, the Mitsubishi Chemical Group proactively participates in regional beautification and environmental conservation activities.

Participation in Kurashiki Zero Garbage Campaign (Mizushima Area)

In conjunction with the Zero Garbage Campaign in conducted throughout the city of Kurashiki, Mitsubishi Chemical's Mizushima Plant, along with other Group companies, conducted cleanup activities around business office locations.

In fiscal 2009, 123 Group company employees participated in this campaign, which is part of our RC and CSR activities.



Road Cleanup Activities (Sakaide Area)

Four times each year, Mitsubishi Chemical's Sakaide Plant, along with neighboring companies, conducts cleanup activities along roads in the Bannoshu Industrial Complex.

Eighty Group company employees participated in this year's cleanup activities, collecting approximately 70 kg of garbage along roads the employees use every day to commute to work.



Beautification Activities Conducted at Local Oasis Suzuka River (Yokkaichi Area)

The Mitsubishi Chemical Yokkaichi Plant and Group companies, along with local businesses and regional citizens in the Shiohama area of Yokkaichi, participated in the Suzuka River Cleanup Plan. This plan began with voluntary efforts by local businesses and residents' associations who wanted to clean up the Suzuka River, a local oasis in the Shiohama area.

Despite light rain, 1,300 people, including regional citizens and company employees, participated in the Suzuka River cleanup activities, which were conducted for the fifth straight year in 2009.



Facility Tours for Neighborhood Elementary School Students

Students from neighborhood elementary and middle schools were invited to tour Mitsubishi Chemical Group facilities in an effort to convey the fun of manufacturing and importance of work to children.

Elementary Students Attend Classes Away From School (Sakaide Area)

In November 2009, Mitsubishi Chemical's Sakaide Plant held classes for neighborhood elementary school students in grades one through four.

The classes focused on working people and work vehicles by introducing daily activities at a security and disaster prevention team station, which included a demonstration of aerial water cannons, fire hoses and a fire truck.



Introducing Cutting-Edge Technology and Manufacturing Sites to Middle School Students (Yokkaichi Area)

In May 2009, regional middle school students were given a tour of Mitsubishi Chemical's Yokkaichi Plant.

In addition to visiting the Yokkaichi Chemistry Plaza, where they were introduced to Mitsubishi Chemical products and technologies, students experienced manufacturing and cutting-edge technology firsthand through test rides on the *KAITEKI*, Mitsubishi Chemical's three-wheeled bicycle equipped with an assist motor.

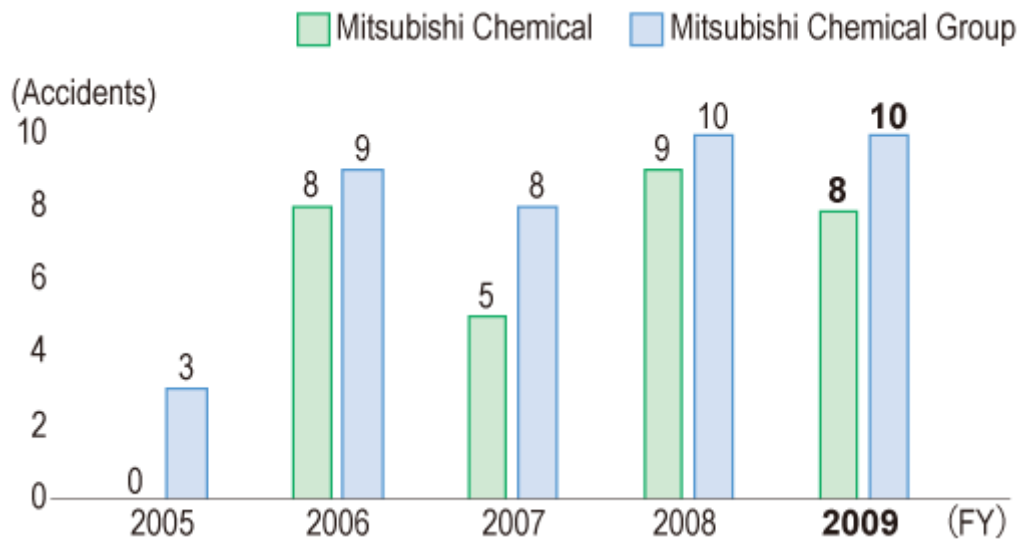


Safety Data

Contents

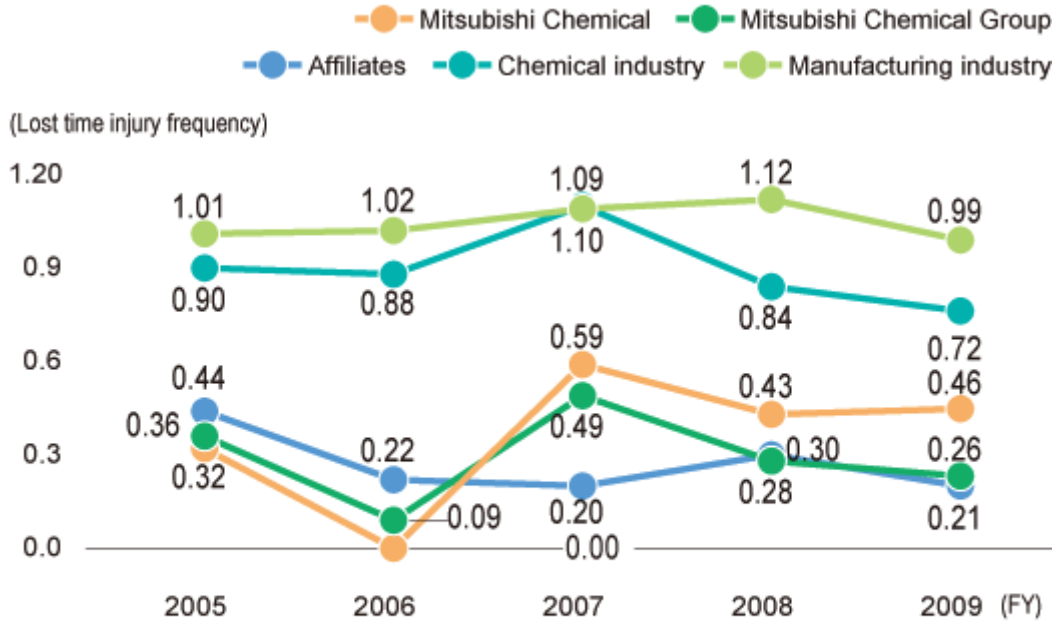
- ✦ [Number of Facility-related Accidents](#)
- ✦ [Lost Time Injury Frequency](#)
- ✦ [Lost Time Injury Accidents by Types \(Mitsubishi Chemical Group\)](#)
- ✦ [Breakdown of Lost Time Injuries \(FY2005 – FY2009\)](#)
- ✦ [Percentage of Standard Health Examinations Progressing to the Specific Health Guidance Level \(Mitsubishi Chemical\)](#)
- ✦ [Work Days Off Due to Illness \(Mitsubishi Chemical 2009\)](#)

Number of Facility-related Accidents



Detailed explanation of this data is available [here](#).

Lost Time Injury Frequency

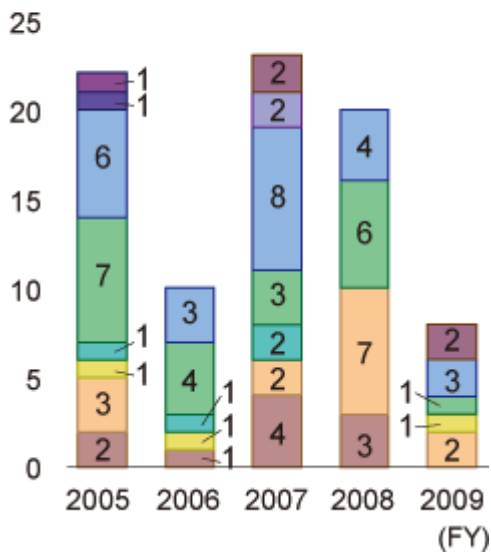


$$\text{Lost time injury frequency} = \frac{\text{No. of casualties to occupational accidents}}{\text{Working hours}} \times 1,000,000$$

Detailed explanation of this data is available [here](#).

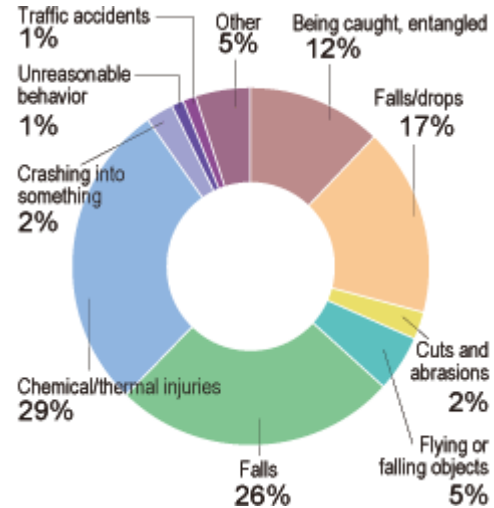
Lost Time Injury Accidents by Types (Mitsubishi Chemical Group)

- Being caught, entangled
- Falls/drops
- Cuts and abrasions
- Flying or falling objects
- Falls
- Chemical/thermal injuries
- Crashing into something
- Unreasonable behavior
- Traffic accidents
- Other



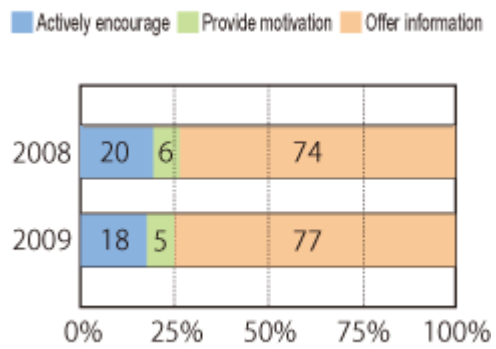
Detailed explanation of this data is available [here](#).

Breakdown of Lost Time Injuries (FY2005 – FY2009)



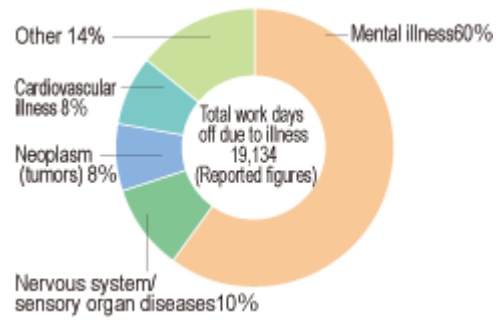
Detailed explanation of this data is available [here](#).

Percentage of Standard Health Examinations Progressing to the Specific Health Guidance Level (Mitsubishi Chemical)



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Work Days Off Due to Illness (Mitsubishi Chemical 2009)



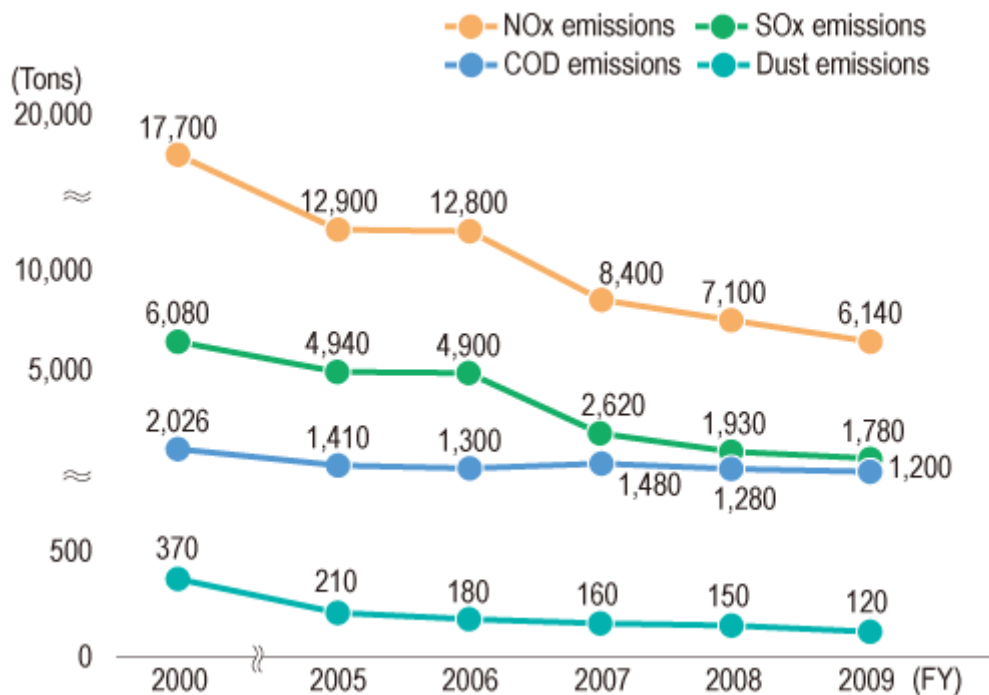
Detailed explanation of this data is available [here](#).

Environmental Data

Contents

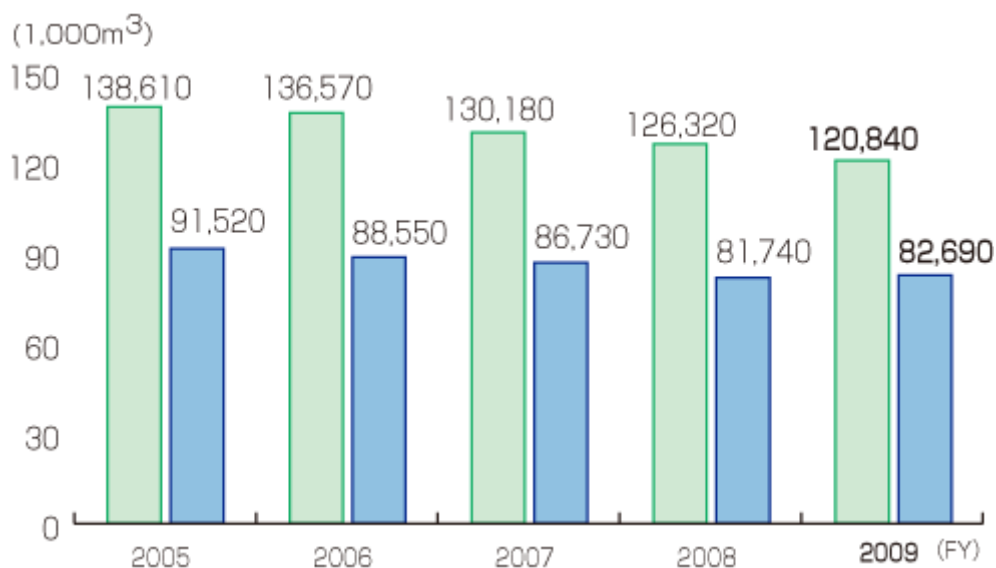
- ✦ [Air and Water Pollution Control \(Mitsubishi Chemical\)](#)
- ✦ [Water Consumption \(excluding seawater\)](#)
- ✦ [Energy Consumption \(Mitsubishi Chemical\)](#)
- ✦ [CO₂ Emissions](#)
- ✦ [5 Greenhouse Gas Emissions](#)
- ✦ [Result of Efforts to Reduce Energy Consumption Units](#)
- ✦ [Total Amount of Release and Transfer of Monitored Chemicals \(Mitsubishi Chemical\)](#)
- ✦ [Emissions of Substances Regulated under the PRTR Law](#)
- ✦ [VOC Emissions \(Mitsubishi Chemical Group\)](#)
- ✦ [Details of 17 substances for which emissions are over 10 tons per year](#)
- ✦ [Total Emissions of Substances Covered by Voluntary Control Systems](#)
- ✦ [Acrylonitrile Emissions](#)
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- ✦ [1,2-Dichloroethane Emissions](#)
- ✦ [1,3-Butadiene Emissions](#)
- ✦ [Benzene Emissions](#)
- ✦ [Final Landfill Disposal Volume and Recycling Rate](#)
- ✦ [Waste Processing Flow \(not including transient construction waste\)](#)
- ✦ [Waste Processing Flow \(including transient construction waste\)](#)
- ✦ [Material Flow](#)
- ✦ [Investment and Expenditure Relating to Environmental Protection and Safety](#)

Air and Water Pollution Control (Mitsubishi Chemical)



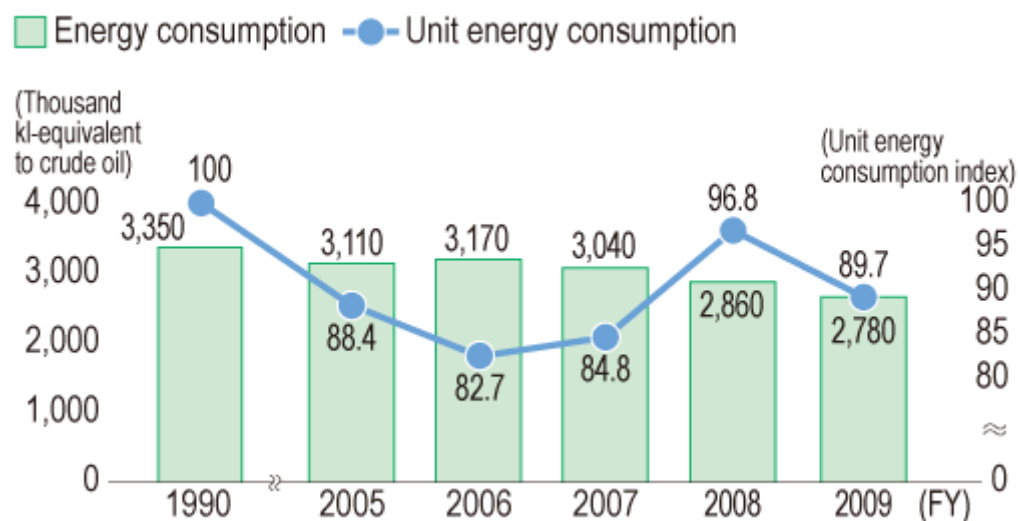
Detailed explanation of this data is available [here](#).

Water Consumption (excluding seawater)



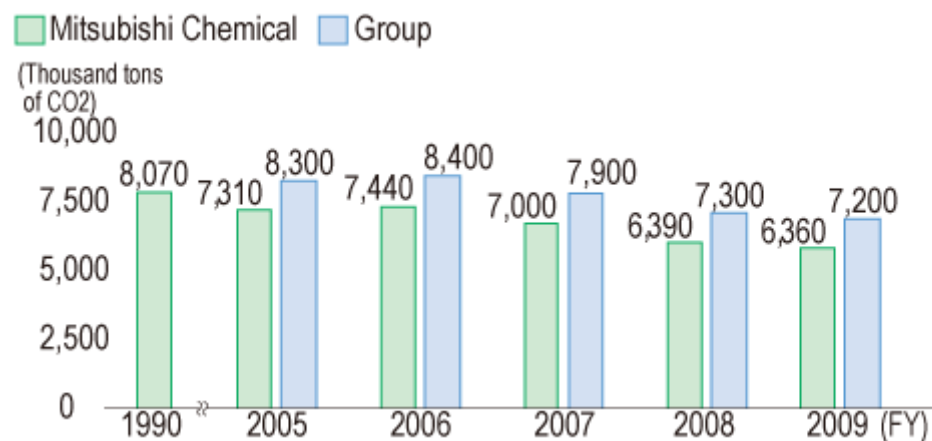
Detailed explanation of this data is available [here](#).

Energy Consumption (Mitsubishi Chemical)



Detailed explanation of this data is available [here](#).

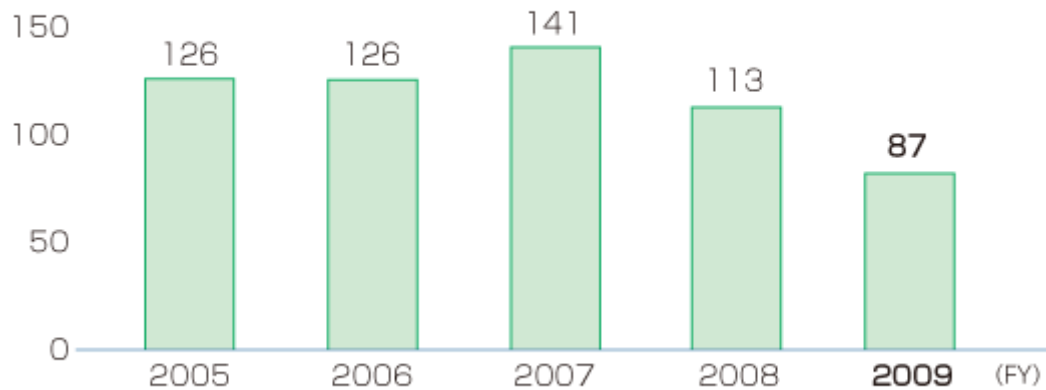
CO₂ Emissions



Detailed explanation of this data is available [here](#).

5 Greenhouse Gas Emissions

(1,000t-CO₂)
200



* Greenhouse gases: Methane, dinitrogen monoxide, hydrofluorocarbon (yearly volume filled), perfluorocarbon (yearly volume filled), sulfur hexafluoride

Detailed explanation of this data is available [here](#).

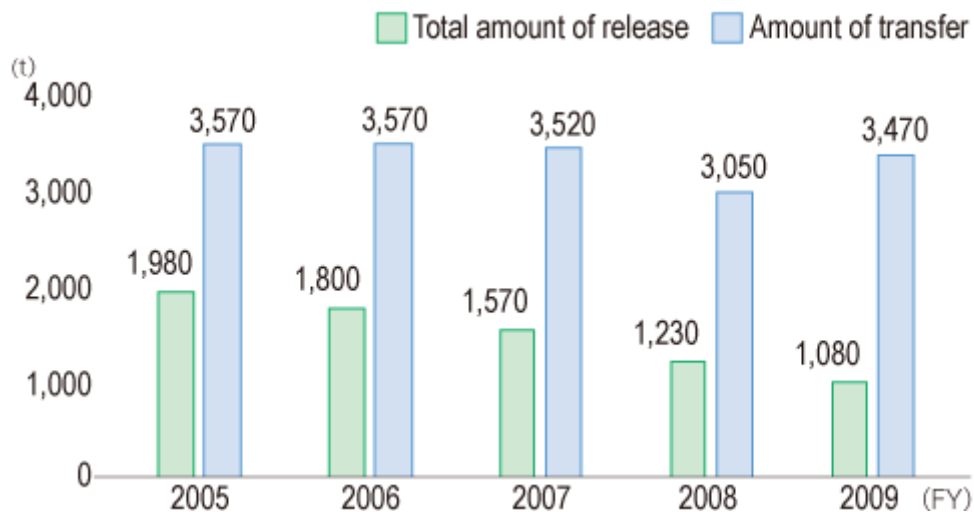
Result of Efforts to Reduce Energy Consumption Units

	Fiscal 2006	Fiscal 2007	Fiscal 2008	Fiscal 2009
Energy consumption (GJ)	1,175,069	1,130,753	908,307	953,157
Fuel usage (KL) (Crude oil equivalent)	30,317	29,173	23,434	24,591
Shipping weight (million tonst)	4.6	4.6	3.9	3.9
Shipping volume (1 million ton-kilograms)	1,504	1,486	1,196	1,239
CO ₂ emission (metric tons of CO ₂)	80,700	77,800	62,500	65,800
Unit energy consumption (KL/1 million ton-kilograms)	20.16	19.63	19.59	19.85

Changes from 2006 to 2007: 4% reduction (Energy), 2.6% reduction (Unit energy), 20% reduction (CO₂), 0.2% reduction (Unit energy).
Changes from 2007 to 2008: 5% increase (Energy), 5% increase (Unit energy), 5% increase (CO₂), 1.3% increase (Unit energy).
Changes from 2008 to 2009: 5% increase (Energy), 1.3% increase (Unit energy), 5% increase (CO₂), 1.3% increase (Unit energy).

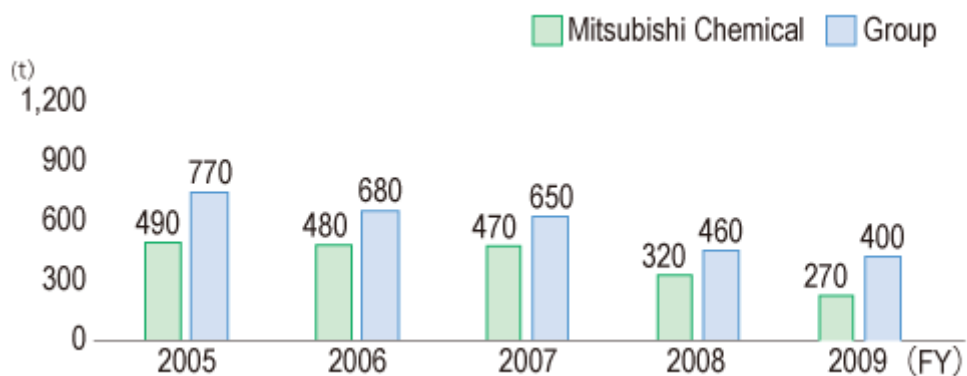
Detailed explanation of this data is available [here](#).

Total Amount of Release and Transfer of Monitored Chemicals (Mitsubishi Chemical)



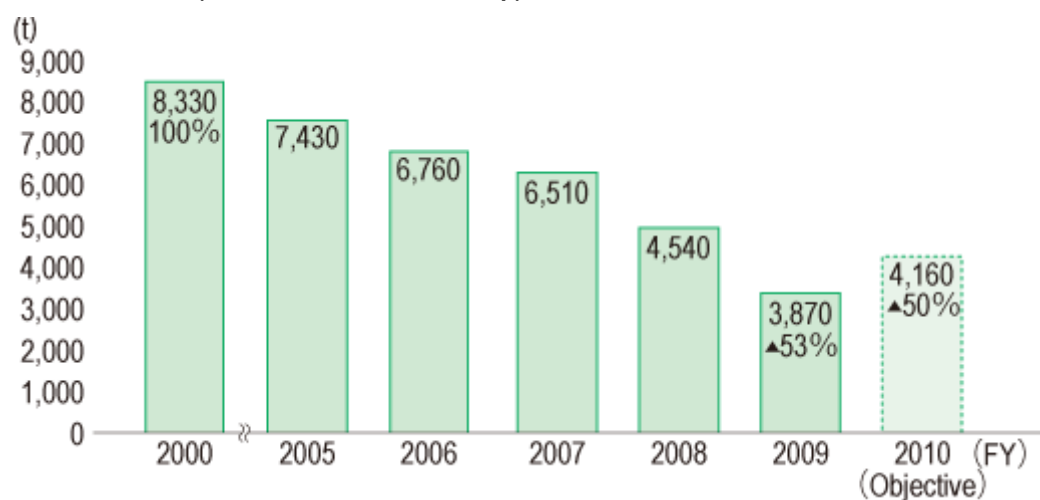
Detailed explanation of this data is available [here](#).

Emissions of Substances Regulated under the PRTR Law



Detailed explanation of this data is available [here](#).

VOC Emissions (Mitsubishi Chemical Group)



Detailed explanation of this data is available [here](#).

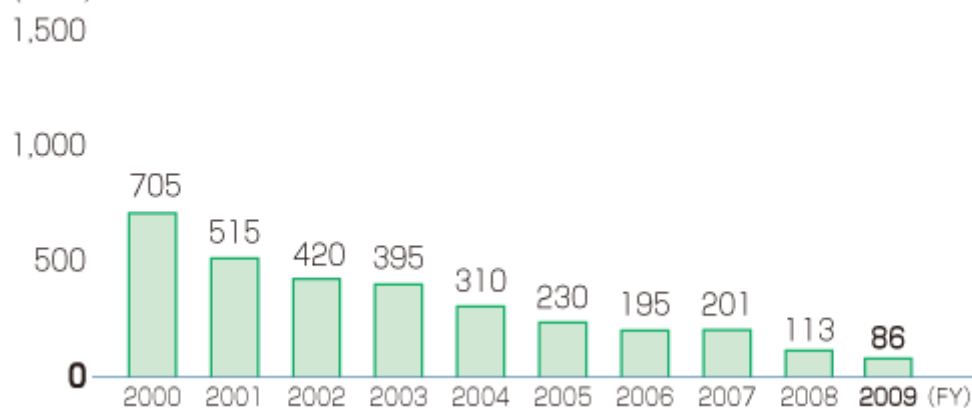
Details of 17 substances for which emissions are over 10 tons per year

PRTR No.	Chemical substance	Location of discharge			Total release	Amount of chemicals transferred	
		Air	Water	Land		Air	Water
	C4-C8 Hydrocarbon	464	0	0	464	349	
	Methyl alcohol	48	5	0	54	860	
	Cyclohexane	51	0	0	51	15	
	Phosphorous and its compounds	3	48	0	51	10	
299	Benzene	45	0	0	45	14	
	Acetone	43	0	0	43	285	
	Butyl alcohol	43	0	0	43	1	
304	Boron and its compounds	0	36	0	36	2	
	Tetrahydrofuran	36	0	0	36	55	
177	Styrene	33	0	0	34	53	
288	Bromomethane	29	0	0	29	0	
227	Toluene	21	0	0	21	163	
63	Xylene	13	0	0	13	0	
	Hexane	12	0	0	12	130	
77	Chloroethylene	11	1	0	12	0	
	Butyl aldehyde	11	0	0	11	0	
7	Acrylonitrile	10	0	0	10	0	
	Total of emissions over 10 tons/year	872	90	0	963	1,939	
	Total of PRTR-designated substances	970	106	0	1,076	3,471	

Detailed explanation of this data is available [here](#).

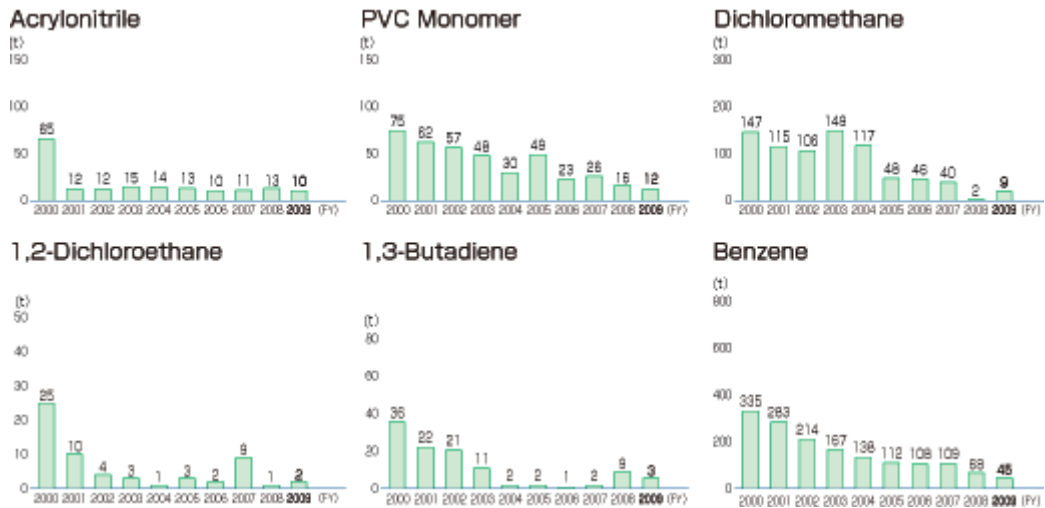
Total Emissions of Substances Covered by Voluntary Control Systems

(Tons)



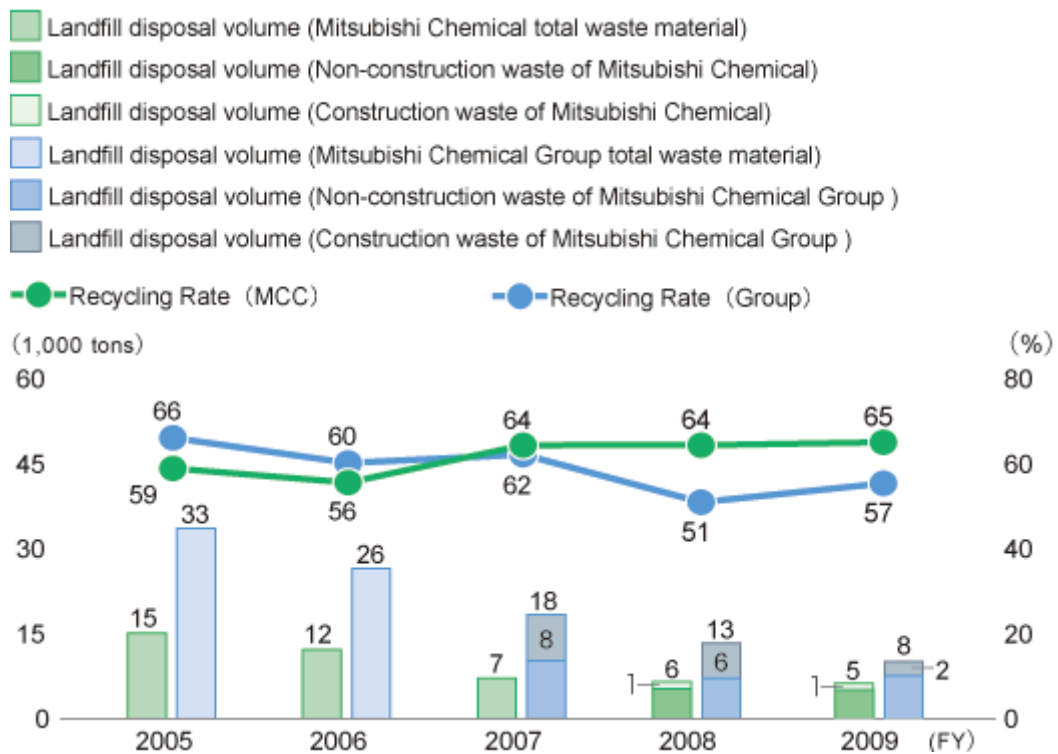
Detailed explanation of this data is available [here](#).

Acrylonitrile Emissions / PVC Monomer Emissions / Dichloromethane Emissions / 1,2-Dichloroethane Emissions / 1,3-Butadiene Emissions / Benzene Emissions



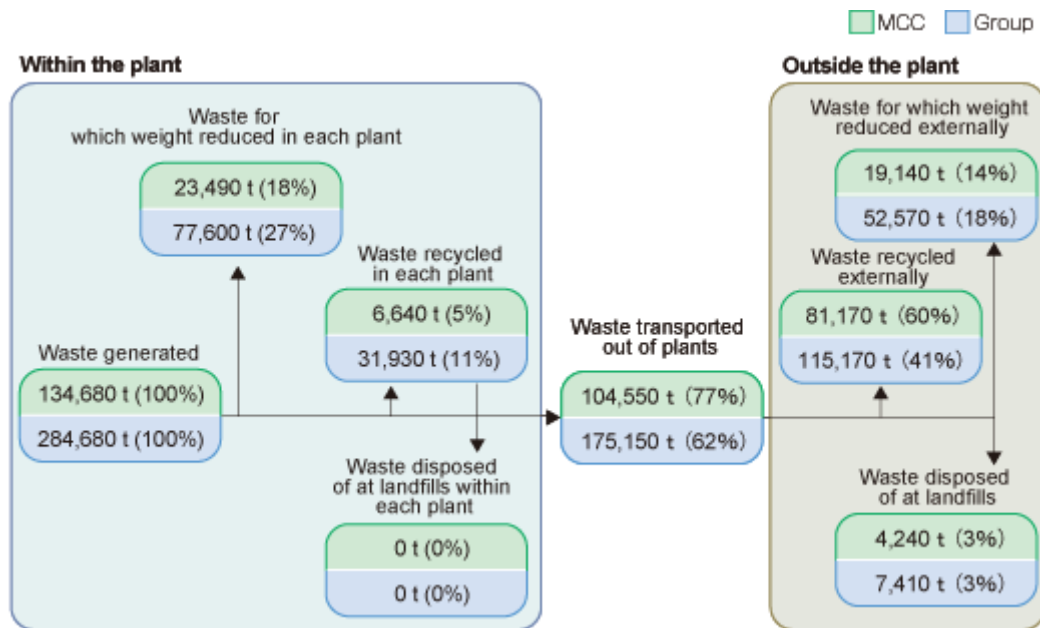
Detailed explanation of this data is available [here](#).

Final Landfill Disposal Volume and Recycling Rate



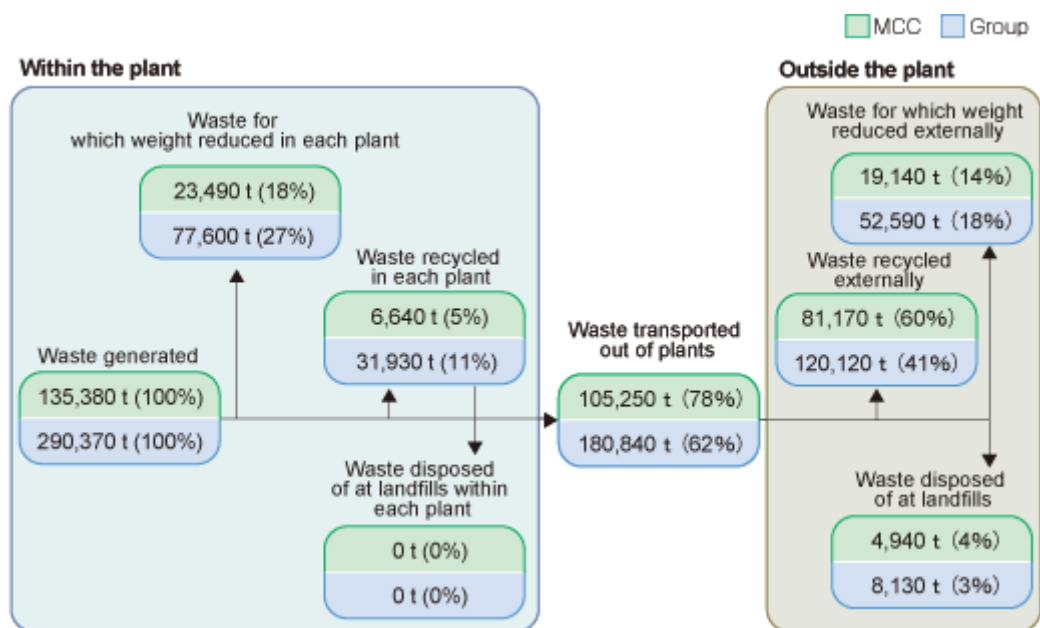
Detailed explanation of this data is available [here](#).

Waste Processing Flow (not including transient construction waste)



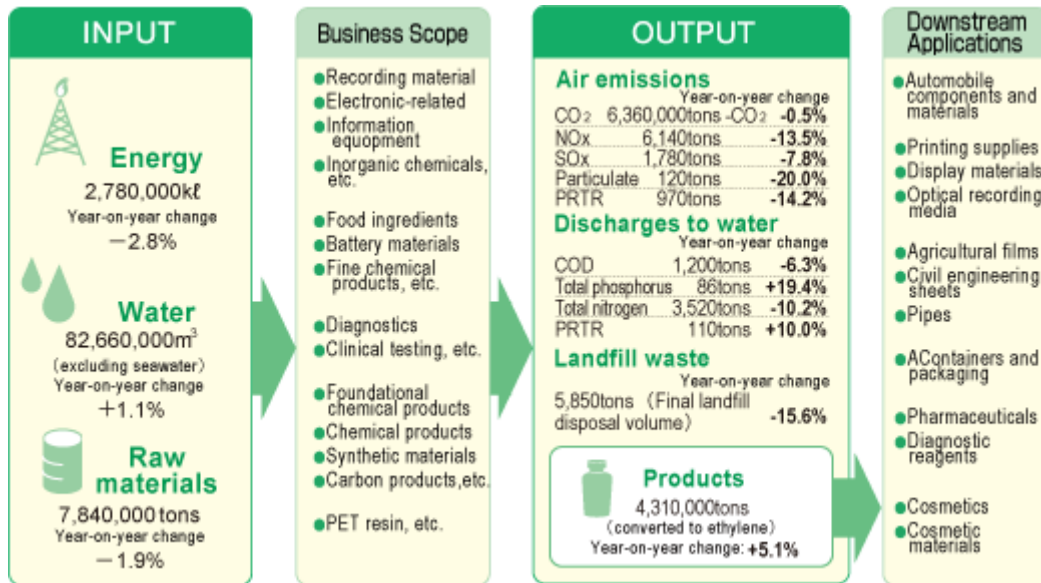
Detailed explanation of this data is available [here](#).

Waste Processing Flow (including transient construction waste)



Detailed explanation of this data is available [here](#).

Material Flow



Detailed explanation of this data is available [here](#).

Investment and Expenditure Relating to Environmental Protection and Safety

(Millions of yen)

Costs of Our Activities Relating to Environment Conservation		2009		2008	
Category		Investment	Cost	Investment	Cost
Environmental conservation cost to reduce environmental impacts generated in our sites due to our manufacturing and service activities (on-site cost)		1,721	22,583	3,688	23,711
Breakdown	1. Pollution prevention cost	1,353	15,472	3,429	16,912
	2. Global environmental conservation cost	266	1,345	0	963
	3. Resource recycling cost	102	5,765	259	5,836
Environmental conservation cost in our management activities (environmental management activity cost)		0	1,092	0	971
Environmental conservation cost in our research and development activities (research and development cost)		0	3,304	0	3,514
Environmental conservation cost in our social activities (social activity cost)		28	462	154	508
Cost to address damages to the environment (environmental damage cost)		1	55	38	348
Other environmental conservation costs (other costs)		0	543	0	588
Subtotal		1,750	28,038	3,880	29,640
Costs of Our Activities Relating to Environment Conservation		2009		2008	
Category		Investment	Cost	Investment	Cost
Cost to comply with safety legislation (safety legislation cost)		270	3,564	174	3,341
Cost of voluntary risk management for safety (voluntary risk management cost)		39	7,455	28	7,407
Cost of safety management activities (safety management cost)		0	885	0	862
Subtotal		309	11,904	202	11,610
Total		2,059	39,942	4,082	41,250

[Click here for larger image](#)

Detailed explanation of this data is available [here](#).

Social Data

Human Resources Data

	2007	2008	2009
Paid vacation (Days)	14.3	14.7	13.4
Usage	69.1%	69.3%	63.2%
Maternity leave (People)	35	39	44
Childcare leave (People)	52	60	82
Nursing care leave (People)	3	3	0

Detailed explanation of this data is available [here](#).

Third-Party Opinion

» Mr. Hideto Kawakita

» Ms. Junko Edahiro

Responses to Last Year's Mr. Hideto Kawakita's Opinion

Below is a summary of changes made for this year's CSR report, in response to Mr. Hideto Kawakita's opinions on the fiscal 2009 report.

Overview of Comments Regarding the CSR Report 2009	Mitsubishi Chemical's Responses
<p>Mitsubishi Chemical needs to increase its rate of recycling for construction waste, which constitutes the majority of landfill disposal, by seeking customers' understanding and through shared responsibility. To achieve this goal, the Company needs to step up its waste separation and promote R&D and technology sharing.</p>	<p>With the understanding of its customers, Mitsubishi Chemical Engineering, which handles a significant portion of the facility dismantling undertaken by the Mitsubishi Chemical Group. This report introduces the Group's initiatives to raise its recycling rate and reduce landfill disposal by promoting waste separation and designating appropriate disposal companies. (Detailed explanation of this initiatives is available at Waste Reduction and Recycling)</p>
<p>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.</p>	<p>We have set up a system that makes it easy for stakeholders to share their opinions with us at any time via the Mitsubishi Chemical website. We take these comments into consideration when creating our CSR reports.</p>

Third-party Opinion on the CSR Report 2010



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

International Institute for Human Organization and the Earth (IIHOE): 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/> (Aavailable only in Japanese)

This opinion was written based on the content of this website and on an interview with the person in charge of CSR at Mitsubishi Chemical.

Regarding its CSR initiatives, it can be said that Mitsubishi Chemical has begun to properly implement the PDCA management cycle for environmental load reduction and a wide range of other initiatives.

Points Deserving High Ratings

- The Company has developed the SEARCHGAIT product to maintain or improve the health of elderly people. The world's first product of this type, SEARCHGAIT is well-suited for Japanese society, which is beset with a declining birthrate and an aging population. I welcome this product and look forward to its increased popularity and use.

- The Company significantly reduced total chemical substance emissions through the introduction of new technologies and facilities improvements, with progress in the areas of styrene recovery and benzene absorption.
- With regard to compliance, the Company has conducted awareness surveys, to gauge the pervasiveness of compliance, in the Chinese, English and Indonesian languages. I would like to see these efforts continued and expanded, and hope the Company will reflect the survey results in its systems and educational programs.
- I consider the Mitsubishi Chemical Junior Designer Award—which has been in place for five years—to be a highly original program and one that offers solid social value. I look forward to seeing how the Company will link this program with its efforts to create *The KAITEKI* Society and increase its number of contacts with society.

Areas Requiring Further Effort Based on Initiative Progress

- Regarding companywide safety measure revises and enhancements following the Kashima Plant accident in December 2007, I commend the Company for its efforts to cultivate a safety culture. However, I would like to see further initiatives to increase the visibility of safety through information sharing and cooperation with affiliates.
- In terms of promoting waste reduction, the Company deserves praise for activities at its Yokkaichi Plant to promote the use of carbon as fuel, as well as in bricks and gypsum roadway paving materials. That said, Mitsubishi Chemical needs to increase the rate of waste separation and promote R&D and technology sharing, to seek the understanding and shared responsibility of customers to increase the recycling rate.
- Among its activities involving business partners, the Company should be recognized for the supplier briefings that it began holding in October 2010. Meanwhile, in the interest of establishing an EHS (Environment, Health, Human Rights, and Safety) foundation within the supply chain in the medium term, actions to establish a framework for evaluating specific items and their progress, sharing issues and stimulating aggressive improvements must begin with main business partner companies.
- In terms of improving the working environment, 3.67% of Mitsubishi Chemical employees are enrolled in the system for taking leave or working shorter hours for childbirth, child-rearing or nursing care. I commend the Company's simplification of explanatory materials and revised meeting procedures. Going forward, I would like to see Mitsubishi Chemical make additional revisions to its meeting procedures and determine the extent of its progress in simplifying decision-making systems and materials. I also hope Mitsubishi Chemical will promote initiatives to achieve similar levels at each Group company.

Points in Need of Greater Effort

- Regarding dialogs with stakeholders cited as being a critical element of CSR promotion, I am seriously concerned that no clear description is provided indicating 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



Junko Edahiro
Environmental Journalist
Translator
Co-Founder and Chief Executive, Japan for Sustainability (JFS) Founder
and President, e's Inc.

e's Inc.
<http://www.es-inc.jp/en/index.html>
JFS
<http://www.japanfs.org/en/>

This is a strong report; it contains the necessary information, arranged in an easy-to-read format. The development of plastics that do not use fossil fuels, photovoltaic modules, lithium-ion battery materials, LEDs—I am delighted about the bold role that Mitsubishi Chemical is taking in the development and practical application of materials that will be essential to the sustainable society of the future.

I congratulate the Company on the internal structure, worksite activities and thorough audits that it has put in place—testaments to its extensive RC activities over the years. I am impressed by Mitsubishi Chemical's efforts to improve the work-life balance in a true sense: creating time by improving working processes, rather than simply increasing the amount of time spent on safety education.

The Company deserves high marks for its textbook application of the PDCA cycle to its RC activities in such areas as chemical substances, global warming countermeasures and occupational safety. This is evident by the way it formulates initiative policies, conducts activities in cooperation with people at worksites, posts results, analyzes causes and specifies future actions. The Company does a thorough job of analyzing the status of lost time injury accidents and year-on-year increases in CO₂ emissions from shipping and devising countermeasures. The report introduces a number of practical examples of such measures and methods, along with corresponding activities.

To improve further, it will be important for the Company to focus on initiatives outside the scope of its current RC activities, raising the quality of these new endeavors to the level of its current endeavors through application of the PDCA cycle. On the social front, for example, the Company describes its initiatives targeting business partners and employees. For example, it could apply the PDCA cycle to bilateral communication with business partners, including feedback on their present situation and issues that they are experiencing.

Although Mitsubishi Chemical indicates its corporate stance on overtime hours worked and female employees, the report does not describe current conditions, contributing factors and how it determines this information. Nor does it elucidate on future policies or measures that are being undertaken. I would ask the Company to improve the quality of its PDCA application and reporting in these areas, as it does with regard to the management of chemical substances and occupational safety.

Clearly positioning its communications with stakeholders from the outset as one aspect of its CSR activities is laudable, but surely “communication with regional communities and greater society” and “contributing to society” are different topics. While it is true that participating in various community activities is a type of social contribution, in future reports the Company needs to define its policy for communicating with regional communities and greater society, describe how it recognizes its current situation and outline its future undertakings. Rather than relying on event-specific communications, I would like to see the Company step forward by indicating specifically what is required to ensure ongoing regional communities and greater society and exactly how it is creating opportunities for such communication.

Mitsubishi Chemical's internal management system is truly excellent and a model for other companies to follow. In future reports, I look forward to seeing how the Company expresses its “cooperative creativity” as it goes outside its corporate boundaries to work with companies in other industries, private citizens and NGOs.

枝廣淳子