



# TABLE OF CONTENTS

- 2 Table of Contents/Editorial Policy/What is Responsible Care (RC)?
- 3 Corporate Profile
- 4 Business Outline
- 5 Corporate Vision
- 6 Message from the President

## Highlights 1 CSR of the Mitsui Chemicals Group

- 8 Commitment to CSR
- 10 Expectations for CSR Activities of the Mitsui Chemicals Group

## Highlights 2 Communication

- 12 Communication with Local Communities  
I. Opinion Exchange Meeting at the Nagoya Works
- 14 II. Efforts at Domestic Works
- 16 Social Communication and Communication with Employees

## Management

- 18 Corporate Governance
- 19 Compliance with Laws and Regulations

## RC Management

- 20 Basic Policy Regarding the Environment, Safety, Occupational Health, and Quality
- 21 Environmental Impacts of Mitsui Chemicals  
- Business Activities Covered by RC Management -
- 22 RC Management
- 24 Fiscal 2004 Results and Fiscal 2005 Goals
- 26 Environmental Accounting/Assessment of Environmental Impacts

## RC Performance

- 28 Commitment to Environmental Preservation
- 32 Commitment to Occupational Safety and Health
- 34 Commitment to Process Safety and Disaster Prevention
- 35 Commitment to Quality Management

## Highlights 3

- 36 For Supplying Safe Products to Society  
- Efforts for Product Safety -
- 40 Commitment to Logistics Safety and Quality
- 41 Products, Technologies and Businesses That Contribute to Society

## Social Report

- 44 Considerations for Employees

## Economic Report

- 46 Financial Performance

## Data Sheets

- 47 PRTR Data
- 48 Site Reports
- 50 Independent Comments on the 2005 Report
- 51 External Awards/Internal Awards/History of Activities toward "Sustainable Growth"/Editors' Postscript

## Editorial Policy

Previously, until 2004, this report featured responsible care (RC) initiatives. We have expanded the scope of RC activities to include corporate social responsibility (CSR), and have changed the title to the "CSR Report." This year's issue with the new title focuses on the activities shown below.

### About the CSR Activities of the Mitsui Chemicals Group

This year's report presents our CSR activities as an extension of RC activities (refer to pages 8 and 9).

### Communication

The report describes our efforts to enhance communication with society, including dialogues with experts at various positions (refer to pages 10 and 11), and communication with a focus on dialogues with local residents living in the vicinity of our plants (refer to pages 12 to 17).

We received independent comments. We asked a contributor to the 2003 Report to review our activities over the past years, and an expert in CSR to attend the dialogue as an observer and to express his opinion on our attitudes and efforts concerning CSR (refer to page 50).

### RC Performance

Mitsui Chemicals handles a broad range of chemical substances. RC performance data are presented with a focus on our efforts for product safety to supply safe products to society (refer to pages 36 to 39).

We will conduct CSR activities befitting the Mitsui Chemicals Group. These will include RC activities, internal discussions using this report, and a continuing dialogue with society.

Since there is always room for improvement in our CSR Report, we cordially invite our readers to send us your comments and suggestions. We look forward to reading your opinions in the attached questionnaire or at the address below.

### Guidelines Referred to in Preparing the Report

- Environmental Reporting Guideline 2003 of Japan's Ministry of the Environment
- Environmental Accounting Guideline 2002 of Japan's Ministry of the Environment
- Sustainability Reporting Guidelines 2002 of the GRI (Global Reporting Initiative)

### Scope of the Report

- **Period:** Fiscal 2004 (April 1, 2004 to March 31, 2005)  
(Some sections cover the activities in the period beyond April 2005)
- **Scope:** The data presented in this report were taken from a total of 11 sites of Mitsui Chemicals, Inc. (five domestic works, R&D center, head office, and three branches; see the map at the right) and 39 domestic subsidiaries or affiliates located on company premises<sup>\*1</sup>. This fiscal year, we began taking data on RC performance, social reports, and communication from the subsidiaries and affiliates located outside Mitsui Chemicals' premises<sup>\*2</sup> (26 domestic and 18 overseas).  
<sup>\*1:</sup> Subsidiaries and affiliates located on the premises of works of Mitsui Chemicals and under their control concerning environmental activities.  
<sup>\*2:</sup> Subsidiaries and affiliates located outside the premises of works of Mitsui Chemicals, having a manufacturing department, and a capital ratio exceeding 50%.

The Yamaguchi Styrene Plant was transferred to a third party in January 2004. The performance data affected are specified individually.

### Date of issue:

January 2006 (previous issue released January 2005, coming issue scheduled to be released December 2006)

### For inquiries about this report, please contact:

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### What is Responsible Care (RC)?

RC encompasses all those activities implemented by manufacturers of chemical substances in order to avoid pollution of the environment. These activities include improvements to methods and processes undertaken in order to preserve the environment or to protect the health of the general public, to protect employees' health, and to prevent damage to facilities. More information is available on the Japan Responsible Care Council/JRCC's website.

### URL of the Japan Responsible Care Council (JRCC):

[http://www.nikkakyo.org/organizations/jrcc/top\\_e.html](http://www.nikkakyo.org/organizations/jrcc/top_e.html)



Responsible Care

# Corporate Profile

## Company Name

mitsui chemicals, inc.

## Head Office

Shiodome City Center, 1-5-2, Higashi-shimbashi, Minato-ku,  
Tokyo 105-7117, Japan

## Main Business Contents

### ■ Functional Chemicals and Engineered Materials

(Functional fabricated products, electronics materials, information materials, agrochemicals, and fine chemicals)

### ■ Functional Polymeric Materials

(Elastomers, performance polymers, specialty resins, and urethane chemicals)

### ■ Basic Chemicals

(Fiber intermediates, PET resin, phenols, and industrial chemicals)

### ■ Petrochemicals

(Petrochemical feedstocks and polyolefins)

## CEO and President

Kenji Fujiyoshi

## Paid-in Capital

¥103,226 million

## Employees (As of March 31, 2005)

12,228 (Consolidated)

4,937 (Non-consolidated)

## Domestic Manufacturing Sites

Ichihara Works (including Mobara Center),  
Nagoya Works, Osaka Works,  
Iwakuni-Ohtake Works,  
and Omuta Works

## R&D Center

Sodegaura Center

## Domestic Sales Offices

Head Office and three branches  
(Nagoya, Osaka, and Fukuoka)

## Overseas Office

Beijing Office

Head Office

Ichihara Works

Ichihara Works Mobara Center

Sodegaura Center

Nagoya Works

Nagoya Branch

Osaka Branch

Osaka Works

Iwakuni-Ohtake Works

Fukuoka Branch

Omuta Works

### Asia

China (4 companies)  
Korea (2 companies)  
Taiwan (2 companies)  
Thailand (7 companies)  
Malaysia (2 companies)  
Singapore (6 companies)  
Indonesia (5 companies)

### Europe

Germany (1 company)  
United Kingdom (2 companies)  
Netherlands (1 company)

### North America

United States (6 companies)  
Mexico (1 company)

As of March 31, 2005

### Domestic (104 companies)

### Overseas (39 companies)

72 Consolidated subsidiaries

mitsui takeda chemicals, inc.; osaka petrochemical industries, ltd.; shimomoseki mitsui chemicals, inc.; tohcello co., ltd.; hokkaido mitsui chemicals, inc.; miike dyes works, ltd.; mitsui chemicals engineering co., ltd.; mitsui chemical analysis and consulting service inc.; and others

(48 companies in total)

#### ■ United States

mitsui chemicals america, inc. and others

#### ■ Germany

mitsui chemical europe GmbH.

#### ■ Singapore

mitsui chemicals singapore, ltd.; mitsui phenol singapore pte., ltd.; mitsui elastomers singapore pte., ltd.; and others

#### ■ Thailand

siam mitsui pta co., ltd.; mitsui hygiene materials (thailand) co., ltd.; and others

(24 companies in total)

71 companies in which the Group holds equity

toyo engineering corporation; ge plastics japan ltd.; du pont-mitsui polychemicals co., ltd.; keyio ethylene co., ltd.; nippon a&l inc.; gem pc ltd.; du pont-mitsui fluorochemicals co., ltd.; yamamoto chemicals, inc.; japan polystyrene inc.; honshu chemical industry, ltd.; and others

(56 companies in total)

#### ■ Indonesia

p.t. amoco mitsui pta indonesia; p.t. petnesia resindo

#### ■ Thailand

thai pet resin co., ltd. and others

#### ■ China

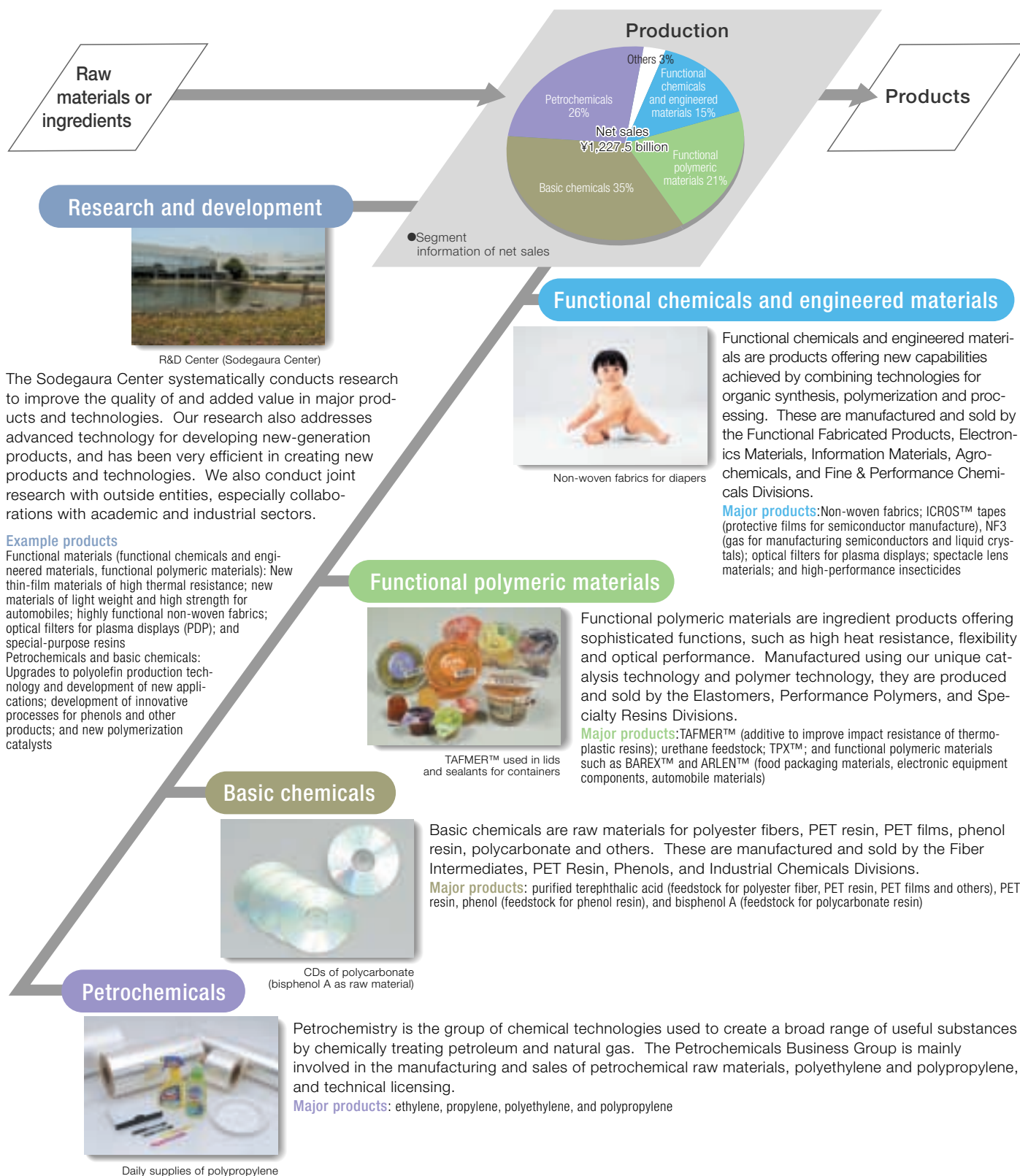
mitsui hi-polymer (asia) ltd. and others

(15 companies in total)

## Business Outline

The Mitsui Chemicals Group provides society with a broad range of materials for consumer goods and durable goods. Because our group companies are essentially material manufacturers, only a few of our products come to consumers' notice. However, the materials supplied by our group are processed into common products in an immense variety of areas, including information and electronics, medicine and healthcare, automobiles, agriculture and fisheries, housing and building, and daily supplies.

A big feature of the Mitsui Chemicals Group resides in its potential for research and development. Results of steady R&D activities have been incorporated in our products. We will continue to be positive in R&D to provide safer, more convenient materials.



## Corporate Vision

The Mitsui Chemicals Group formulates four-year medium-term business plans to embody the Corporate Mission and Corporate Targets in its corporate vision. In the fiscal 2004 medium-term business plan (FY 2004-2007), the Mitsui Chemicals Group as a whole is implementing three strategies of the plan. Our theme is “Caring for Environment, Safety and Quality,” with RC as an integral part of our business philosophy and corporate mission.

### Corporate Mission

**Contribute broadly to society by providing high-quality products and services to customers through innovations and creation of materials, while keeping harmony with the global environment.**

- Promoting human well-being
- Contributing to value of shareholders' investments
  - Increasing customer satisfaction
  - Contributing to local communities
- Promoting the happiness and fulfillment of employees

### Corporate Target

**Strong and Excellent  
Mitsui Chemicals Group  
with a strong competitive position  
in the global market.**

Basic Strategy 1  
**Changing Business  
Structure and  
Strengthening  
Profitability**

Basic Strategy 2  
**Enhancement  
of Group  
Management**

Basic Strategy 3  
**Caring for  
Environment,  
Safety and  
Quality**



**We Pursue  
“Dream-Inspiring Innovation”**

## Contributing to Society through Science and Technology ... That's the Mitsui Chemicals Way

Mitsui Chemicals established the CSR Division in June 2005. Although the term CSR actually stands for "corporate social responsibility", we have added the concept of "social contributions" to CSR. This reflects our wish to contribute broadly to society as a corporate entity, in addition to fulfilling our social responsibilities. The chemical industry has been contributing to society in a variety of ways, and will be able to make many more contributions. We will continue our efforts to inform the residents of the areas adjoining to our works, and the general public, of our hopes and intentions for the future.

Every employee must take the lead in promoting CSR. To help them to make subjective efforts for CSR, we are formulating our New Corporate Action Guidelines with the key concepts of Always in Good Faith, For People and Society, and Dream-Inspiring Innovation, on the basis of the opinions and proposals voiced by our employees.

"Always in Good Faith" is an essential for the existence of Mitsui Chemicals as a corporate entity.

"For People and Society" means that we give the highest priority to people, and always pay attention to the stakeholders around us. I want our employees to realize why Mitsui Chemicals is promoting CSR activities, and to have frank dialogues with society in preparation for specific efforts.

The wording "Dream-Inspiring Innovation" has a double meaning of both creating dreamy "things" on one hand and dreamy "creation" on the other. We are proud of being a manufacturer engaged in "creation" and would like to continue to be one. Chemical manufacturers possess technical resources making it possible to create "dreamy things" that have never existed in this world before. We believe this technology is the reason for our existence and is the way for us to make our greatest possible contribution to society.

## Every Employee Thinks of What Society and Our Company Should Be in 2020.

In recent years, "global sustainability" has often been mentioned. However, the phrase would be meaningless unless one takes a scientific approach. We have the potential to contribute to the creation of a sustainable planet.

For example, global warming associated with the burning of petroleum and other fossil fuels, is posing a serious problem. A sustainable society cannot be created by simply burning the limited reserves of petroleum to obtain energy, while releasing CO<sub>2</sub>. Although the chemical industry consumes petroleum, it is also able to manufacture useful chemical products from petroleum and recycle them into other products and thermal energy. Such recycling systems are able to exist because of chemical technology. More advanced technology will make it possible to significantly reduce energy

consumption and waste volume. Hence, the chemical industry can play many roles in the process of realizing a sustainable society.

For example, Mitsui Chemicals has been developing pollution-free manufacturing processes and the bio-based polymers LACEA™ from plants. We have also been sponsoring an international symposium on catalysis science featuring collaboration among the academic, industrial and governmental sectors. At the Second Mitsui Chemicals International Symposium on Catalysis Science —Green Catalysts for Specialty Chemicals—, organized in March 2005 around the theme of cutting-edge "green" catalysts, lectures were given on research into technical innovations based on catalysis. These innovations will enable dramatic reductions in environmental burdens compared to conventional approaches.

We are determined to lose no opportunity to contribute to innovations in chemical technology in general, as well as in environmental technology.

Currently, we are discussing what kind of society will have developed and what our company should be doing in 2020.

We will continue to pursue our goal of being a manufacturer distinguished by "Dream-Inspiring Innovation". I want every employee to think about what we can do and how we can contribute to society on two bases, preserving and exploiting our production site capabilities and contributing to society. Mitsui Chemicals will make its mark through these efforts.



*K. Fujiyoshi*

President  
MITSUI CHEMICALS, INC.

# Commitment to CSR

At the Mitsui Chemicals Group, the CSR Task Force was established to accomplish the goals advocated in its corporate vision, and has been discussing what its CSR activities should be. The CSR Committee was established in fiscal 2005 to enhance our commitment to CSR. The committee has implemented measures to identify current issues and to increase the spontaneous creativity of each employee.

We will integrate these efforts and seek deeper meanings in the theme of “CSR activities befitting the Mitsui Chemicals Group.”

## The Mitsui Chemicals Group's CSR Aims to Make Social Contributions

The purpose of the Mitsui Chemicals Group's CSR is to fulfill the goals advocated in its corporate vision. As advocated in our corporate mission statement, contribution to society by “providing high-quality products and services to customers” through “innovations and the creation of materials,” while “keeping harmony with the global environment,” represents the spirit of CSR.

Accordingly, we have added the concept of “social contribution” to CSR, which literally means “corporate social responsibility”. This does not simply represent philanthropic activities such as volunteer activities and monetary donations, but covers a broader scope of action, including contributions to the various stakeholders mentioned in our corporate mission statement.

The Mitsui Chemicals Group will continue proactive efforts to become a company that continually earns the trust of all stakeholders and contributes to building a sustainable society.

## CSR Targets

We have been promoting various activities based on the concept of CSR. For example, we have been placing great importance on responsible care (RC), an essential theme for a chemical company. We are determined to secure facility safety, product safety, and employees' safety and health, and to reduce our environmental load.

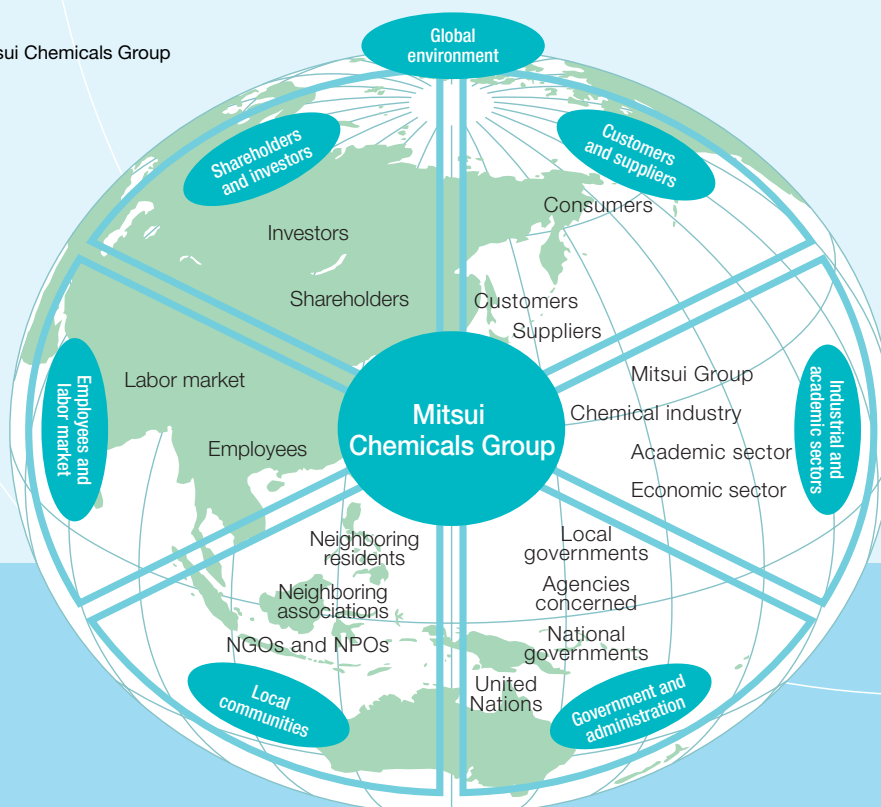
We have been working to earn the trust of all stakeholders and fulfill the objectives of our corporate vision through a broad range of activities, such as risk management, compliance, open disclosure of information, and contributions to local communities at each works. We pursue unique technologies, particularly development of environmentally friendly products, including the bio-based polymers LACEA™ from plants. We also sponsor the Mitsui Chemicals International Symposium on Catalysis Science (refer to page 16) and offer the Mitsui Chemicals Catalysis Science Award.

We will integrate and enhance these activities from the viewpoint of CSR, and will more positively contribute to society through further efforts. We look forward to creating new values through our business activities deeply connected with the environment and society, and social activities appropriate to the Mitsui Chemicals Group.

## Stakeholders of the Mitsui Chemicals Group

The stakeholders around the Mitsui Chemicals Group are roughly divided into seven categories. The relationships between our stakeholders and business activities are diagrammed below. The global environment is positioned as encompassing all stakeholders.

Relationships between Stakeholders and the Mitsui Chemicals Group



## CSR Promotion System

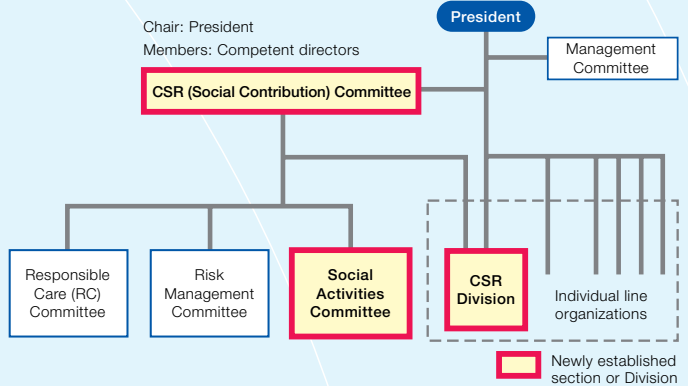
Mitsui Chemicals established the CSR (Social Contribution) Committee, chaired by the president, on June 28, 2005. This is an internal organization responsible for drafting company-wide policies and programs consistent with CSR. Positioned under the CSR Committee are the existing Responsible Care Committee and Risk Management Committee, as well as the newly established Social Activities Committee. The CSR Division was also established to take charge of activities in the CSR promotion system.

## New Corporate Action Guidelines

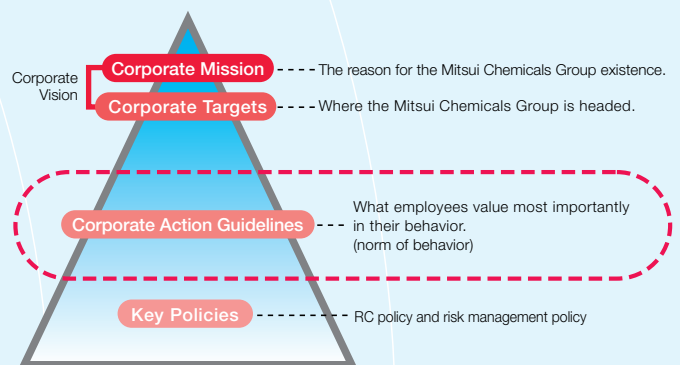
The first step in promoting CSR is to set forth our expectations for employees' behavior, for a unified standard and effort throughout the company. Hence, we decided to totally revise our Corporate Action Guidelines, formulated in 2002, to enhance CSR.

First, our CSR Task Force selected key items for the norm of behavior from the corporate vision and the concept of CSR. We surveyed our employees and identified three categories of action items based on their responses. We asked our employees to express their frank opinions regarding specific issues. We will continue discussions with the aim of formulating and releasing the New Corporate Action Guidelines by the end of fiscal 2005.

### CSR Promotion System



### Scheme of Corporate Vision and Corporate Action Guidelines



### Three Categories in the New Corporate Action Guidelines

- "Always in Good Faith":** Essential attitudes concerning compliance with laws and regulations, management transparency, equality and fairness and other key issues for the existence of Mitsui Chemicals as a corporate entity.
- "For People and Society":** Essential attitudes on key issues concerning stakeholders, including customer satisfaction, coexistence with the community, emphasis on the environment, and safety.
- "Dream-Inspiring Innovations":** Essential attitudes on key issues for a chemical manufacturer, including creativity and originality, globalization, ideas from work places.

## CSR Supporters Appointed Company-wide

In promoting CSR, each employee must fully understand the concept of CSR and embody their thoughts in voluntary actions.

Accordingly, a total of about 200 CSR Supporters were appointed at all sites to encourage every employee's voluntary adherence to the principles of CSR, and to reflect employees' opinions in our CSR activities. Many of them were appointed at their own request. We hope that the CSR Supporters will help our stakeholders to see the Mitsui Chemicals Group as an ethical and trustworthy company. The trust of stakeholders and the pride of employees will drive the sustainable growth of the Mitsui Chemicals Group.

The first task assigned to the CSR Supporters will be to join the process of formulating the "New Corporate Action Guidelines" that are comprehensible and sympathized by themselves as the norm of employee behavior.



Explanatory meeting on appointment of CSR Supporters

### Comment from Manager

"What CSR activities are most appropriate to the Mitsui Chemicals Group?" and "What should we do for the sake of social contribution through Dream-Inspiring Innovation?" — We believe it is our responsibility at the newly established division to think about these themes and embody them along with employees. To this end, we would like to conduct activities joined by all employees, including provision of opportunities to freely talk about their dreams.



**Ken Migita**  
CSR Division

# Expectations for CSR Activities of the Mitsui Chemicals Group

The Mitsui Chemicals Group established the CSR Committee in fiscal 2005. Accordingly, we held a stakeholder dialogue meeting with the participation of four outside experts and two executives of Mitsui Chemicals (responsible for CSR and RC) to inform society of the objectives of the Mitsui Chemicals Group's CSR activities, specific efforts, and approaches to their promotion, and to understand the public expectation for our CSR activities. Here is a report of the meeting.

## We Hope You Will Conduct CSR Activities Appropriate to the Mitsui Chemicals Group

**Yamaguchi:** Generally speaking, the term CSR is not identical to social contribution. In your new concept of CSR, however, the term is used to refer to contributing to society at large, rather than simply to philanthropic activities such as volunteer activities. You think, "CSR equals social contribution," don't you?

**Ori:** That shows the originality in the Mitsui Chemicals Group's CSR activities. I'd like to propose, however, that you should make it clear that CSR puts greater emphasis on social contribution, because it's no use advocating a policy that can be commonly held up by any company. I'd like you to stress further the originality of CSR in its activities that suit well with your group.

**Sakita:** My impression of the Mitsui Chemicals Group has been that it is a big and excellent company, but rather is not familiar to us. If a company's "face" is invisible or unclear, in the event of an accident, consumers are likely to harbor suspicions about the company's safety practices and its products. In the coming years, I think you need to place greater emphasis on

earning the familiarity and trust of the public.

**Yamaguchi:** It is also important that you familiarize yourself to the general consumer. To this end, I'd like to suggest you present more accessible topics in your CSR report and elsewhere, for example, "It is easier to recycle PET bottles if you do such-and-such before you put them out for collection."

**Kawaguchi:** At the same time, I would encourage you to clarify where you plan to go. You advocate "harmony with the global environment" in your corporate philosophy. Raw materials for your products are for the most part derived from petroleum. Hence, you face a problem with the sustainability of your current business in relation to the fossil resource issue. I want you to think about this coming problem sincerely, and to work out your own viewpoint and future goals for your CSR activities.

## How Do You Position RC in CSR?

**Yamaguchi:** Although you include the concept of RC in your CSR activities, the position of RC is unclear. I've been concerned that RC activities in chemical manufacturers are directed too much inward. I encourage you to be more out-



wardly oriented and to upgrade your RC activities. I hope that you will emphasize RC and clarify its position in CSR to make your CSR program more comprehensible.

**Kawaguchi:** I think there may be some confusion in thinking about CSR due to the existing RC system. You'd probably be better off if you put aside RC and made a completely fresh start on CSR. This is because there is a concern about what is really going on or being accomplished if a chemical company's CSR is designed by tacking on factors missing in RC, such as considerations of human rights.

**Ori:** I think RC is a good system as it takes into consideration these important factors such as risk management and communicating with local communities. Fundamentally, however, RC doesn't embody the concept of sustainable development. In that sense, I rec-





**Ms. Akemi Ori**  
Kanto Gakuin University  
Assistant Professor of Law



**Ms. Mariko Kawaguchi**  
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**Ms. Yuko Sakita**  
Journalist/Environmental Counselor



**Mr. Koji Yamaguchi**  
Vice President/Executive Expert  
NEC Corporation

commend you to embrace this concept to RC, and make use of it as a tool for publicizing your activities to the audience outside.

**Shinohara:** We have been conducting voluntary RC efforts with sincerity. These involve the environment, safety, occupational health, and quality. But now, we feel now that our activities may have been directed somewhat too much inward. We also realize that our RC activities were not penetrated enough to employees, here and abroad. We are determined to improve employee awareness of CSR in the entire group and to provide reliable information that helps outside sectors to understand our CSR activities.

### Importance of Communication with Local Communities and Suppliers

**Sakita:** I've been informed that you are about to establish an internal system, "CSR Supporters." That's wonderful! I hope that the new system will nurture employees who are positive in improving your company, who will take the leadership in implementing CSR activities. I also suggest you cooperate with local public groups and ask them to send you their ideas to improve the company.

**Ori:** You had better not forget to conform to the public opinion at large. In material industry, the top-ranking companies are wont to hold principles that deviate from common sense. For example, at local meetings for discussion, chemical companies typically try hard to give risk information, while the attending local inhab-

itants often have completely different interests in the meeting. Sometimes, they simply want to listen to some enticing descriptions of what can be accomplished by the power of chemistry. Additionally, meetings held in Japan for discussion with the locals receive no feedback. Nuclear power plants in France give feedback to participants in the meetings to inform them of improvements they made in response to their opinions. This is also important.

**Sakita:** Specific and respectful dialogues should lead to the trust of local inhabitants. A certain company raised the question "Do you think our company is trustworthy?" to local inhabitants attending a dialogue meeting, both before and after the meeting. Sixty percent of the participants answered "I don't know" before the meeting. After the meeting, the ratio of such responders decreased dramatically, with a much larger number of responders answering "Yes, I think you are trustworthy." Even just a two-hour dialogue can be very effective.



**Kawaguchi:** Chemical manufacturers will be required to pay greater attention in choosing suppliers of raw materials. For Mitsui Chemicals, the suppliers are oil companies. I'd like to advise you to check up on the sources from which your suppliers buy crude oil, so that you can avoid unintentionally participating in corruption in the governments of oil-producing companies, or supporting aggressive military powers.

**Ori:** The important thing for employees is always to bear in mind the relationship between their company's products and society. Every employee needs to keep their eyes and ears open to the trends in society. That's the key to your success.

Date and hours: 13:00 – 15:00, August 30 (Tuesday), 2005  
Venue: Congress room, Head Office, MITSUI CHEMICALS, INC.

### Notes on the Comments

Today's stakeholder dialogue meeting is the first opportunity of this kind in our history. Thank you very much for your informative and valuable opinions. We agree that our top priority is to conduct CSR activities befitting the Mitsui Chemicals Group, and to conduct them in a way more comprehensible to the public. We are determined to go step by step, along with our employees, in pursuit of that good "fit" to the Mitsui Chemicals Group, that will dovetail with our unique technical resources and our corporate culture.



**Yoshiyuki Shinohara**  
Center Executive,  
Production &  
Technology Center



**Katsunari Yamashita**  
General Manager,  
CSR Division

## Communication with Local Communities

## Opinion Exchange Meeting at the Nagoya Works

Mitsui Chemicals sees local communities as important stakeholders in its business activities, and holds opinion exchange meetings with neighboring residents near one of our works every year. On August 23, 2005, we held a plant tour and an opinion exchange meeting at Nagoya Works, one of Mitsui Chemicals' domestic manufacturing sites in an industrial area of the Minami Ward of Nagoya City, Aichi Prefecture. We invited Mr. Kiyoshi Nakamura of the Nagoya City Environmental Affairs Bureau, Chemical Substances Advisor Mr. Tomohisa Yamamoto, and the chairpersons and women's association chairwomen in the six neighboring school areas.



## Various Efforts in the Nagoya Works

The Nagoya Works is characterized by the high percentage of its production for information and electronics materials. The tour guides described the basic features of the works and Mitsui Chemicals' environmental preservation activities. The tour then moved to the wastewater treatment facility, underground water treatment facility, and the ICROS™ tape plant.

## ● Wastewater treatment facility

This facility processes 3,800 tons of wastewater from the manufacturing processes per day. Wastewater containing organic matter is passed through an aeration tank, a primary sedimentation tank, and a final sedimentation tank. In the aeration tank, organic matter is decomposed by the action of bacteria. The resulting clean water effluent is discharged into the River Oe.

The released water is monitored continuously for discharge flow rate, water quality and other parameters. If any abnormal reading is taken, release is stopped immediately.



A tour at wastewater treatment facility

## ● Underground water treatment facility

At the Nagoya Works, a voluntary survey of the soil and underground water was conducted, and underground water pollution with volatile organic compounds (VOC) was discovered in some portions of the premises. In 2004, a survey report was submitted to the Nagoya City government and made available to the general public.

The polluted underground water is treated by the underground water treatment facility. Its capacity was increased from 350 tons/day to 700 tons/day with the addition of another installation in April 2005.

## ● ICROS™ tape plant

ICROS™ tapes are protective films that prevent semiconductor wafers from being cracked during polishing. The Nagoya Works is responsible for all processes of manufacturing this product, from base film preparation to adhesive application, cutting into sizes desired by customers, packaging, and shipping. ICROS™ tapes rank top in the share of semiconductor wafer protective films in the world market.



Tour in a clean room

## Opinion Exchange Meetings

**Honan and Chidori Districts:** We smelled an offensive odor during the plant tour. We want to know what caused the odor, and would like you to identify the cause.

**Plant manager:** We may stop noticing bad odors here, they are a part of the routine.

**Yamamoto:** Information exchange is important. I recommend that local residents keep records of odors to describe their characteristics (type and extent), and pass them to the company, and the company make a survey to identify the causative substance(s) and obtain numerical data on the amounts generated, and to disclose the results and remedial measures.

**Hoshizaki District:** We would like to ask about your preparatory measures against the possible future Tokai Earthquake. I'm sure the buildings here are quake-resistant structures, but do you have any concerns about collapse or rupture of piping and other equipment?

**Plant manager:** In the event of an earthquake exceeding the predetermined level of seismic intensity, the main valves of the high-pressure gas tanks are closed automatically to prevent the contents from leaking from the piping. If the quake is strong at degree 5 or more, the fact is broadcast in the premises and plant operations are stopped safely and immediately.

**Hakusui District:** We think it is necessary for us as well to be aware of potential dangers from spills of harmful liquids or flammable substances in the event of earthquakes.

**Takara District:** And how do you prepare yourself for power supply failures in the event of earthquakes?

**Plant manager:** We have two power supply systems: in-house generation and purchased electricity. Even if both fail, diesel-powered generators are started to generate sufficient electricity to assure equipment safety.

**Shibata District:** We have heard many expla-



**Mr. Kiyoshi Nakamura**  
Pollution Control Division,  
Pollution Control Department,  
Nagoya City  
Environmental Affairs Bureau



**Mr. Tomohisa Yamamoto**  
Chemical Substances Advisor\*

#### Six neighboring gaku(school districts)

(chairperson and women's association chairwoman from each gaku)

- Hoshizaki District (\*1) Mr. Toshio Fujimura and Ms. Setsuko Fujita  
(center) (second from right)
- Chidori District (\*2) Ms. Yuko Aihara and Ms. Miyako Kanzaki
- Honan District (\*3) Ms. Haruhiro Fujii and Ms. Teruko Horie
- Shibata District (\*4) Mr. Katsuhiko Hosoda and Ms. Kazue Minami
- Hokusui District (\*5) Mr. Kenji Yamamori and Ms. Nobuko Endo
- Takara District (\*6) Mr. Eiichi Ishii and Ms. Hiroko Imaeda

#### \*What is the "Chemical Substances Advisor" system?

A system in which independent advisors provide objective information and easily understandable advice on chemical substances.

ations today. To tell the truth, however, we have been unable to fully understand what you said, and we are not going to remember much of it.

**Plant manager:** Yes, I'm afraid we may have used too many technical terms in our explanations.

**Yamamoto:** The key to successful risk communication is for local residents and companies to share information on chemical substances and exchange frank opinions, to promote mutual understanding. I appreciate this opinion exchange meeting. You have taken a solid first step toward the goal by hearing out the residents' concerns and suspicions.

**Nakamura:** Chemical substances are useful in many ways on one hand. On the other, harmful chemicals have been identified and their use as a

whole is going to be reduced. In line with this trend, the chemical industry's efforts for their reduction include dialogues with the general public. We, the government of Nagoya City, will establish a risk communication association in the fall of 2005 to facilitate information sharing among the residents who live here in Nagoya. We hope that you will keep open the lines that have been opened in today's meeting.

**All Districts:** Explanatory meetings you held in the past were mostly unidirectional. Today's meeting is the first time we have ever exchanged opinions. We would like to avoid falling into the same pattern in every meeting, so we will change participants, and keep all residents informed of what people said.

**Plant manager:** We have also realized the importance of sharing information and thinking about issues.



\*1



\*2



\*3



\*4



\*5



\*6

#### Notes on the Comments

On this occasion, unlike the plant tours we usually hold every year, we have focused discussion on the environment. Opinions were exchanged concerning our efforts for environmental preservation. Sometimes we have been at a loss how to explain our environmental activities from the standpoint of plants, but we are now confident that problems have been clarified by this exchange of the frank opinions today.

This is the first time we've had this kind of meeting, and we realize that there is room for improving our efforts. However, we will continue to hold dialogues like today's and strive to resolve problems, with the aim of becoming a more trustworthy company.

We have heard many comments about odors from our plants. We tend to stop noticing odors in our routine work. We realize very well how important it is to listen to many of our neighbors' opinions regarding environmental matters.

Mitsui Chemicals' plants are able to be operating by many people's help and support. Environmental issues are becoming more important to society. We fully recognize this importance and will continue striving to accomplish strict voluntary goals for environmental load reduction.



**Taiji Sasanuma**  
Director  
Environment, Safety  
& Administration Dept.  
Nagoya Works



**Koichi Takahashi**  
Manager  
Environment & Safety Section  
Environment, Safety  
& Administration Dept.  
Nagoya Works

## Communication with Local Communities

## Efforts at Domestic Works

Mitsui Chemicals endeavors to disclose all pertinent information to maintain good communication with all our stakeholders at all domestic works. Activities involving members of local communities are a key part of this.

## Regional Communication Activities at Our Works

As a member of the regional community, we want to contribute to the development of regions around our works through various efforts, including plant tours, volunteer activities, lending facilities for events sponsored by our works and regional activities, participating in regional councils, providing lecturers for external training sessions, issuing public relations magazines, and responding to complaints.



## Omuta Works

At our works, we are making a concerted, works-wide effort to reduce industrial waste with the aim of accomplishing the company-wide Zero-Emissions goal. We also conduct cleanup campaigns in collaboration with the community, involving local residents and neighboring companies.



**Ryoichi Konishi**  
General Manager

## ● Joint research with national college

Some ten years ago, we had a request from Ariake National College of Technology to provide part-time lecturers. Since then, we have been providing education from an industrial viewpoint in several courses. Recently, the university and we have instituted a joint research project on sophisticated wastewater treatment technology, in which we provide technical support. We hope that practical application of the technology will contribute broadly to environmental preservation in the region.

## ● Opinion exchange meetings with community center councils

We hold regular opinion exchange meetings, including plant tours, with each of the four community center councils in the areas adjoining our works. We describe the current situation in Mitsui Chemicals and ask the participants of the meetings to express their frank opinions and suggestions concerning our management, environmental measures, safety and other matters. We believe these occasions are quite helpful in facilitating the understanding of the local residents living in the neighboring areas about our business operations and environmental activities.



Joint research with national college

Opinion exchange meeting with a community center council

## Iwakuni-Ohtake Works

We aim to present a vital, cheerful organization open to the local community. We are stepping up our efforts to ensure environmental preservation and product safety. We are promoting bi-directional communication with local residents by listening to their opinions and incorporating them in our measures for environmental preservation and product safety.



**Yuji Miura**  
General Manager

## ● "Local Advisor" system

Mitsui Chemicals established a "Local Advisor" system in June 2004. We are determined to earn the trust of local communities by listening to the opinions from people living or working in the areas adjoining our works. In fiscal 2004, we held two meetings with the attendance of the chairmen of the neighborhood associations of the areas neighboring our works.

## ● Autumn festival

On October 10, 2004, we hold the 8th Mitsui Chemicals Autumn Festival (or the 16th festival, if counting the events before the merger). Offering an amateur singer contest, a flea market, various stalls and other events, the program serves as a good opportunity for exchange with local residents. The fiscal 2004 festival attracted some ten thousand people in spite of bad weather.



"Local Advisor" meeting

Autumn Festival

## Osaka Works

Here at the Osaka Works, all employees are striving to enhance their sensitivity, knowledge and skills. We work together to ensure environmental preservation, product safety and product quality under the theme of "Always in Good Faith." We strive to be open to the general public through communication with the local community.



**Yoshiyuki Funakoshi**  
General Manager

## ● Plant tours

Every autumn, we hold plant tours for third-grade students of elementary schools in Takaishi City as a program of the civic course. In addition to easily understandable explanations of the products manufactured at our works, we conducted demonstrations using dry ice to teach the wonders and the fascination of chemistry. At our Disaster Prevention Center, the participants listened to a talk about fire engines and tried on fireproof clothing. The students were interested in disaster prevention.

## ● Volunteer concert

On May 31, 2005, a volunteer concert was held for the third time at Kyara-No-Sato, a Takaishi municipal health facility for the aged. Eight members of the Music Society of retired employees from the Mitsui Chemicals Osaka Friendship Club put on performances. Many residents and workers attended the concert and enjoyed a presentation of old-time popular melodies.



Trial session at the Disaster Prevention Center

Volunteer concert

### Nagoya Works

Our works aims at becoming Mitsui Chemicals' central supplier of functional materials, mainly information materials and electronics materials. To this end, we are making every effort to improve our activities concerning the environment, safety and quality. Our management is determined to contribute to the development of local communities, to be open to the general public, and always to give top priority to customers.



**Shusuke Yamanaka**  
General Manager

#### ● Plant tours

In February to March 2004, as in 2003, we held plant tours for the women's associations of the six neighboring school districts. A total of 140 women visited our works. We will continue to hold plant tours with an expanded coverage of participants.

#### ● Clean-up campaign

The Nagoya Works conducts "Clean-up Days" activities to straighten up the areas both outside and inside the plants on the second and third Thursdays every month. As part of this program, many employees joined the "City-wide Clean-up Campaign" that took place just before the opening of The 2005 World Exposition, Aichi, Japan.



Plant tour



Clean-up campaign

### Ichihara Works

Three thousand people work at the Ichihara Works. Each of us is making an effort to actualize the motto "Caring for Environment, Safety and Quality," based on the Sengen principle (workplace-oriented approach: measures are planned and executed based on the actual data and facts at workplace). We will continue to show the capabilities of the cutting-edge technology at our production site. We are striving to earn the trust of the local community, and to create an environmentally friendly works which can compete in the world market.



**Junichi Nakagawa**  
General Manager

#### ● Responsible care regional explanatory meetings

On February 3, 2005, we held the fifth responsible care (RC) regional explanatory meeting for the Chiba District. We explained the concept and practice of RC and introduced specific efforts at our domestic sites. We also exchanged information with the participants, including local administrations, commercial and industrial sectors, and neighborhood associations.

#### ● Boys' baseball games

Since 1995, we have been sponsoring "Mitsui Chemicals' Cup Ichihara City Boys' Baseball Championship". This year's meet was joined by a total of 42 teams, which fought a hard three-week battle. We will continue to sponsor the event, with the determination to help the next generation to grow soundly both physically and mentally.



RC regional explanatory meeting



Boys' baseball games

### Ichihara Works Mobara Center

The Mobara Center is located in Mobara City, a core municipality in the Boso Peninsula. We produce functional materials, including paint, adhesives, and printing toner ingredients. We seek to create a factory that contributes to society at large, while doing our best to maintain the highest standards for our environmental programs, process safety and product quality, and harmony with local communities.



**Masato Itaya**  
General Manager

#### ● Participating in Mobara City Tanabata Festival

We have participated in the Mobara City Tanabata Festival with prize-winning results for 26 consecutive years. A party of more than one hundred employees came to this year's 51st event and drew a cheer for their splendid performance from local residents. The team received the Chiba Prefectural Assembly Members' Award.

#### ● Cleaning volunteer activities

As part of our contribution to the local community, employees of the Mobara Center participate in the monthly "Clean Volunteer" cleaning-up campaign. They pick up litter and weed around the site. We will continue to conduct this 40-minute activity during lunch hours, with the determination to earn the trust of the local residents.



Mobara City Tanabata Festival



Cleaning volunteer activities

### Sodegaura Center

Here at the Sodegaura Center, our 1,100 employees develop environmentally friendly technologies and products. They also participate in environmental and safety activities, in the recognition that such activities are an integral part of their research work. We will offer entertaining and inspiring events that arouse children's interest in chemistry, and continue seeking other ways to earn trust from local communities.



**Akihiro Yamaguchi**  
Senior Managing Director  
Center Executive,  
R & D Center

#### ● Wonders-in-Chemistry Class

On August 2 and 3, 2004, we held the first "Wonders-in-Chemistry Class" at the Sodegaura Center, with the participation of 24 sixth-grade students and 47 fifth-graders from elementary schools in Sodegaura City. The participants became more curious about science through the sessions titled "Various Pleasant Products," "Lab Expedition Tour," and "Marvelous Experiments."

#### ● Participating in Sodegaura Local Industrial Festival

In December 5, 2004, Sodegaura Local Industrial Festival was held to promote commercial activities in the region. Participating companies conducted public relations activities and local communication. As one of their representatives, the Sodegaura Center accepted visitors and held lab tours to describe our activities to them.



Wonders-in-Chemistry Class



Sodegaura Local Industrial Festival

### Issuing Public Relations Magazines

In order to encourage local people to understand the activities at our works and promote communication with local communities, public relations magazines are issued at least twice a year at each works.



# Social Communication and Communication with Employees

Mitsui Chemicals promotes communication with stakeholders by conducting various activities from a global viewpoint, focusing not only on advanced countries but also on developing countries, for which we provide safety training programs. We also promote communication with employees, including subsidiaries and affiliates, with programs open to all employees.



The 2nd Mitsui Chemicals International Symposium on Catalysis Science



Professor K.B. Sharpless gives the plenary lecture



Banquet after lecture meeting



## Social Communication

### Hosting International Symposia

On March 22 and 23, 2005, Mitsui Chemicals hosted the Second Mitsui Chemicals International Symposium on Catalysis Science — Green Catalysts for Specialty Chemicals — (MICS2005) at Kazusa Akademia Hall in Kisarazu, Chiba Prefecture. The event featured lectures by eight researchers invited from the industrial and academic communities in Japan and abroad, including Nobel laureate Professor Barry Sharpless from the United States, who delivered the plenary lecture. Mitsui Chemicals also hosted a ceremony to recognize the 2005 recipients of the Mitsui Chemicals Catalysis Science Award. The company established this award with the aim of contributing to the sustainable development of chemistry and the chemical industry. The recipients gave lectures to the 1,200 enthusiastic attendants from the industrial, governmental and academic sectors.

After completion of the lecture meeting on the first day, a banquet took place with the attendance of 270 people, including Mr. Teo Ming Kian, Chairman of Singapore's Economic Development Board (EDB), Chiba Prefecture Governor Akiko Domoto, the mayors of two neighboring cities, and the chairpersons of four academic societies and industrial associations. Young participants also drew attention, including speaker Mr. Hironori Hara, the only high-school student to attend the first symposium in 2003, and high-school students who were about to participate in the 2005 International Chemistry Olympiad. They were introduced by Mr. Shinji Murai, Chairman of the Chemical Society of Japan. This year's symposium served as a place of intensifying friendships among the participants, and came to a successful end with greater responses than the first symposium.

### Commendation on Occupational Health

We received the 2004 Prime Minister's Commendation for Excellent Health Promotion Efforts, sponsored by the Japan Health Promotion & Fitness Foundation. We were recognized for 1) our company-wide efforts for health promotion, 2) our voluntary health promotion activities in internal organizations at individual sites, and 3) our well-equipped and utilized exercise/health-related facilities. Health is an important resource for employees, their families, and workplaces, and represents an important factor in personal happiness. We will strive to maintain and promote the health of employees to ensure their happiness and to preserve the vitality of our organization.

### Donations to Victims of the Earthquake and Tsunami Disaster

Mitsui Chemicals donated a total of 20 million yen to the governments of Thailand and Indonesia through their diplomatic missions in Japan for contributions to the recovery from the Earthquake and Tsunami off the Coast of Sumatra, Indonesia, on December 26, 2004. The company committed 10 million yen to Indonesia and Thailand, respectively. Overseas affiliates in the concerned countries, including SIAM MITSUI CO., LTD., THAI PET RESIN CO., LTD., and GRAND SIAM COMPOSITES CO., LTD. in Thailand, as well as P.T. AMOCO MITSUI PTA INDONESIA, also made donations.

Ceremony for "Commendations on Excellent Health Promotion Efforts"

### Safety Training Program for Technicians from Developing Countries

The IUPAC-UNESCO-UNIDO Safety Training Program offers education and training concerning safety and environmental preservation for technicians from developing countries through on-site sessions, so as to promote the spread of, and improve, safety and environmental technologies for chemical products. In support of the program's object, we accepted in fiscal 2004 two trainees, one from Nigeria and one from Thailand, and provided training at the Iwakuni-Ohtake Works for about two weeks. The trainees expressed their thanks, "the sessions were very instructive and we want to teach others in our countries what we have learned." We received from IUPAC a note of acknowledgement for our participation in the program as a host company.



Trainees completing safety training program

Note of acknowledgement from IUPAC

### Communication with Employees

#### Exchanging Responsible Care (RC) Information with Subsidiaries and Affiliates

We hold various opinion exchange meetings and safety review meetings for domestic subsidiaries and affiliates to share RC-related information, and to formulate preventive measures against RC-related disasters and accidents. For example, subsidiaries, affiliates, Mitsui Chemicals plant managers, and RC managers exchange information and opinions, including explanations about RC annual plans, updates on RC project status, and accident/disaster case reports. Safety review meetings are also held for workplaces classified by type (processing workplaces<sup>\*1</sup> and reaction workplaces<sup>\*2</sup>) to discuss how to prevent accidents prevalent in the respective types. In fiscal 2004, two RC information exchange meetings and three safety review meetings took place with the participation of 3 to 12 subsidiaries or affiliates in each occasion. Representatives exchanged opinions on prevention of static electricity accidents and safety patrols education.

We also exchange information with our overseas subsidiaries and affiliates on the occasions of RC policy meetings, annual plans, accident/disaster case reports, and RC audits. Additionally, we provide safety training according to the environmental and safety management status of each company. In fiscal 2004, a two-week training program was provided for ARUKI, a Mitsui Chemicals affiliate in Indonesia.

<sup>\*1</sup> Processing workplaces: Workplaces mainly involving physical machining, such as plastic molding and film molding

<sup>\*2</sup> Reaction workplaces: Workplaces mainly involving chemical reactions in small reaction vessels

#### External Education at Thai Manufacturing Sites

As part of our program for strengthening the production site capabilities at domestic works, we provided external education for a total of ten section leaders from the Ichihara/Mobara, Nagoya, Osaka, Iwakuni-Ohtake, and Omuta Works, who were dispatched to Mitsui Chemicals Group's manufacturing sites in Thailand (MHM, TPRC, GSC, and SMPC) for five days from March 7, 2005. After they returned home, a briefing session was held to review what they had learned at the respective sites. The session was meaningful with the trainees expressing their impressions in their own words; for example, "I realized how important it is to implement our business operations overseas and how severe the competitive conditions in the global market are." Another trainee said, "This was a good occasion for me to think about what we should do to ensure the survival of domestic works." We hope that what the trainees have learned will be shared by individual workplaces and sites and lead to innovations in the production sites.



Trainees from ARUKI

#### Mutual Understanding of Mitsui Chemicals and its Labor Union

Under the shared philosophy of "developing cooperation between labor and management through frank dialogues and mutual understanding," managers hold regular opinion exchange meetings with the Mitsui Chemicals Labor Union. We also hold meetings of the EHS Forum for Labor and Management to exchange opinions about important topics in RC. These include labor accident prevention and workplace stress mitigation, and emphasize annual plans, performance, audit results and employees' efforts at individual sites.

The Mitsui Chemicals Group gives top priority to securing safety. With this recognition, all employees of the group make a unified effort at individual works and offices to create a safe workplace culture.

#### Production Section Commendations

In fiscal 2004, we instituted a production section commendation system to recognize manufacturing operations and raise ethical awareness among the employees at a total of 61 production sections of the five domestic works of Mitsui Chemicals. In fiscal 2005, the system was expanded to cover domestic and overseas subsidiaries and affiliates. The best-performing sections in the Mitsui Chemicals Group around the globe were selected out of the 101 production sections, including the Maintenance Section, which supports production. The President's Award was presented to the Polyethylene Production Planning & Control Section-1 of the Ichihara Works, and the Production & Technology Center Executive's Award, to the Polyols for Urethane Manufacturing Section of the Nagoya Works and seven other workplaces (recipients listed under "Internal Commendations" on page 51).



External education at Thai manufacturing site (GSC)



Production section commendation ceremony

Ichihara Works (Polyethylene Production Planning & Control Section-1), MITSUI CHEMICALS, INC.

# Corporate Governance

The Mitsui Chemicals Group places its highest priority on enhancing its corporate governance as one of key issues in management in order to earn the trust of shareholders, customers, local residents and all other stakeholders, and to fulfill its social responsibilities as a corporate entity.

## Mitsui Chemicals' Viewpoint of Corporate Governance

We continually improve management transparency to maintain the trust of society at large, and to fulfill our social responsibilities as a corporate entity. Mitsui Chemicals has established a system where important decisions are made only after extensive discussions in the proper meeting prescribed by company regulations. Our system of internal control includes placement of importance to auditors' function, establishment of an internal auditing office, and organization of the Risk Management Committee.

Further, to enhance the effectiveness of our corporate governance system, we promote investor relations and public relations activities, where we disclose information to shareholders, analysts, the media and others outside our company.

## Implementation of Measures Concerning Corporate Governance

### Board of Directors

Mitsui Chemicals' Board of Directors holds meetings once a month, as a rule, to make decisions concerning key issues of business management based on the company's Rules of the Board of Directors. At the meetings, individual directors report on business management status, financial conditions, business achievements, and others, and receive advice about their performance.

### Executive Officer System

Mitsui Chemicals reduced the number of its Board of Directors and adopted an Executive Officer System to clarify the roles and responsibilities of the company's management supervision function and its business management function. These changes speed management decision-making and allow our various divisions to carry out their work smoothly and quickly.

### Direct Audits

Auditors personally attend important meetings, including those of the board of directors, in order to perform their functions effectively during direct audits of business management. This system provides opportunities for communication between top management and auditors. Audits on subsidiaries and affiliates are enhanced, aiding group management.

Of the five auditors, three are outside auditors.

### Management Audit Division

Mitsui Chemicals has established the internal Management Audit Division to monitor accounts and business operations based on the annual plan previously formulated by the Management Committee, and to advise the Management Committee of the findings. The Management Audit Division also conducts audits of subsidiaries and affiliates.

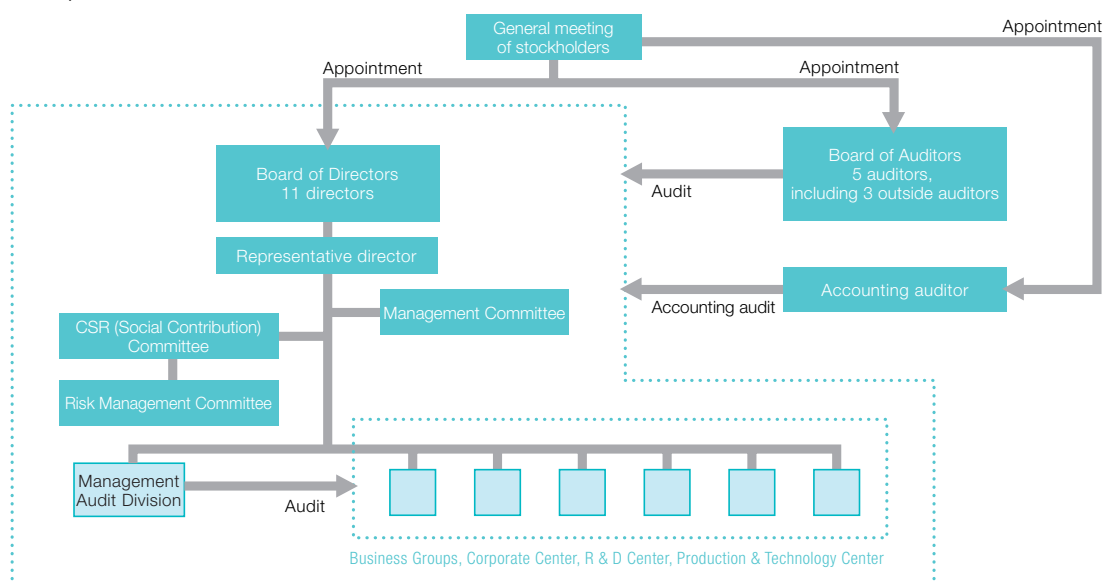
### Management Committee

Mitsui Chemicals has established the Management Committee to debate key issues concerning business management and to provide a check on management decisions.

### Risk Management Committee

We adopted the Mitsui Chemicals Group Risk Management System to ensure early detection of risks and prevent risks from manifesting themselves. We organized the Risk Management Committee, chaired by a director, to draw up risk management policies and maintain and operate the system.

■ Corporate Governance Chart



# Compliance with Laws and Regulations

The Mitsui Chemicals Group maintains awareness of compliance among its employees, and anticipates risks through its group risk management system. These tasks are part of its social responsibilities as a corporate entity.

## Mitsui Chemicals' Viewpoint of Compliance with Laws and Regulations

The Mitsui Chemicals Group holds legal compliance as the key issue for earning the trust of the public, including shareholders, to fulfill its social responsibilities as a corporate entity. It maintains its awareness among employees as described below.

### Basic Principles for Group Risk Management

1. The line managers should ensure that PDCA procedures are carried out when conducting day-to-day risk management.
2. Any employee who has obtained information regarding risks should promptly report all such information to his or her line superior.
3. Any employee who has obtained any information regarding risks should not keep it within his or her department, but should share it promptly with other departments and seek cooperation.
4. Each individual employee should be keenly aware that he or she is personally responsible for risk management, and should maintain an awareness of risk at all times.

## Compliance System

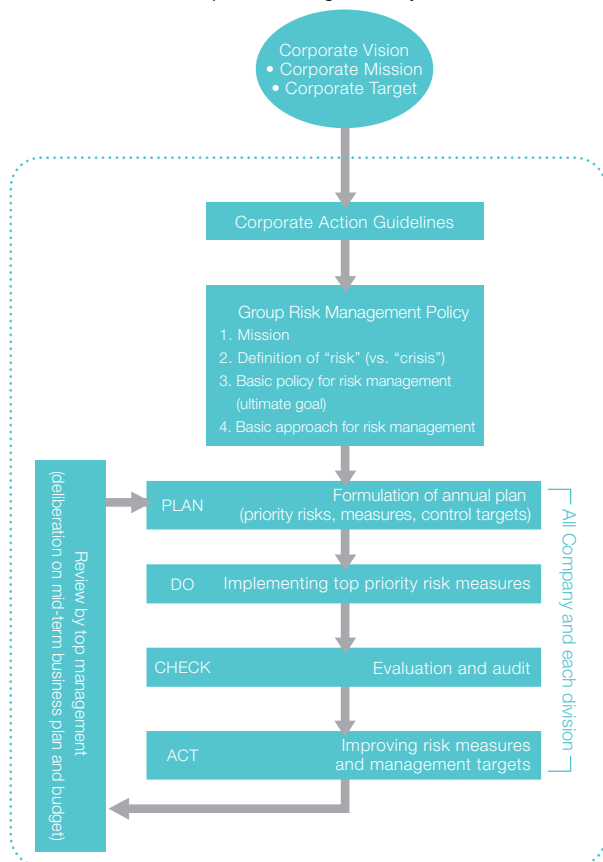
By adopting the Mitsui Chemicals Group Risk Management System in April 2002, and through the company-wide system shown at the lower right, we are working to manage corporate risks against all events with the potential to threaten the business activities of Mitsui Chemicals and its subsidiaries and affiliates.

Under the group's risk management system, compliance is considered the highest-priority risk. Risk management is executed on the basis of the "plan, do, check, and act" (PDCA) cycle at individual organizations.

There is also a risk hotline through which employees of the Mitsui Chemicals Group can directly report to, or consult with, the Risk Management Committee on any suspicious activity within the company, without the fear of reprisal. In this system, company regulations are clearly stipulated to ensure that employees who contact the committee do not receive any unfair treatment.

Some Responsible Care (RC) items, including environment, safety and quality management, are high-priority issues because they may involve a broad range of potential risks.

### ■ Scheme of the Group Risk Management System



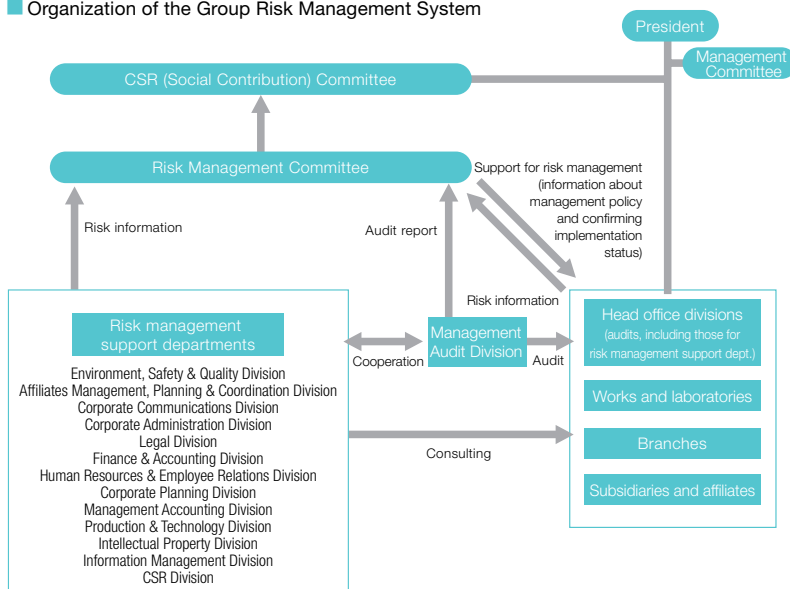
## Training Sessions on Compliance Issues

In 2003, we distributed the Our Action Guidelines booklet to every member of the Mitsui Chemicals Group, including affiliated companies worldwide, to raise awareness of compliance issues for all employees. The guidelines summarize points of attention for our employees when carrying out their work and have been useful in routine programs to raise and maintain awareness of compliance issues. Reading meetings are held at individual workplaces.

In addition to these activities at individual workplaces, awareness-raising training sessions are conducted for management-level employees, line managers, newly appointed managerial personnel, and newly recruited employees. The trainees are encouraged to take the initiative in their workplaces, to improve the awareness in the group as a whole.

Regarding individual laws and regulations on business management, the Mitsui Chemicals Group conducts training sessions on compliance issues for its employees several times every year.

### ■ Organization of the Group Risk Management System



# Basic Policy Regarding the Environment, Safety, Occupational Health, and Quality

Mitsui Chemicals is developing business activities based on a corporate mission which states: “Contribute broadly to society by providing high-quality products and services to customers through innovations, and creation of materials and products while keeping harmony with the global environment.” We are carrying out our business and manufacturing activities within the spirit of RC, based on the recognition that securing environmental integrity and safety is the very foundation of corporate management. We are implementing this basic policy in relation to environment, safety (disaster prevention, product safety), occupational health and quality.

## 1. Environment

- (1) Contribute to environmental preservation by developing new products and technologies.
- (2) Assess and reduce the environmental burden of products through their entire life cycle, from product research and development to final disposal.

## 2. Occupational Health and Safety

- (1) Give priority to securing safety, and aim for accident and injury-free operations.
- (2) Promote the formation of an appropriate work environment and support a proactive health program for employees.
- (3) Implement safety measures and procedures in handling chemical substances to prevent injury or harm to people connected with our activities, i.e., employees and others involved in production and distribution.

## 3. Quality

Supply high-quality products and services that earn the trust and satisfaction of customers so that customers feel confident when using products for their intended applications.

## 4. Promoting Self-management

Strive for continuous improvement in measures related to the environment, occupational health, safety, and quality, beginning with compliance with all applicable laws and regulations based on voluntary adherence to the principles of RC.

Established October 1, 1997  
Revised July 1, 2000

### Comment from Manager

Today's key concern about sustainable development is how to fulfill corporate social responsibility in every single aspect. Mitsui Chemicals conducts activities with a focus on harmony with the global environment and social contribution, as advocated in its corporate mission statement.

I hope that by issuing this report annually, Mitsui Chemicals' responsible care activities based on our policy on the environment, safety, occupational health, and quality, will be well accepted and understood by our readers. We will continue efforts to fulfill our mission with the international public's expectations in mind.

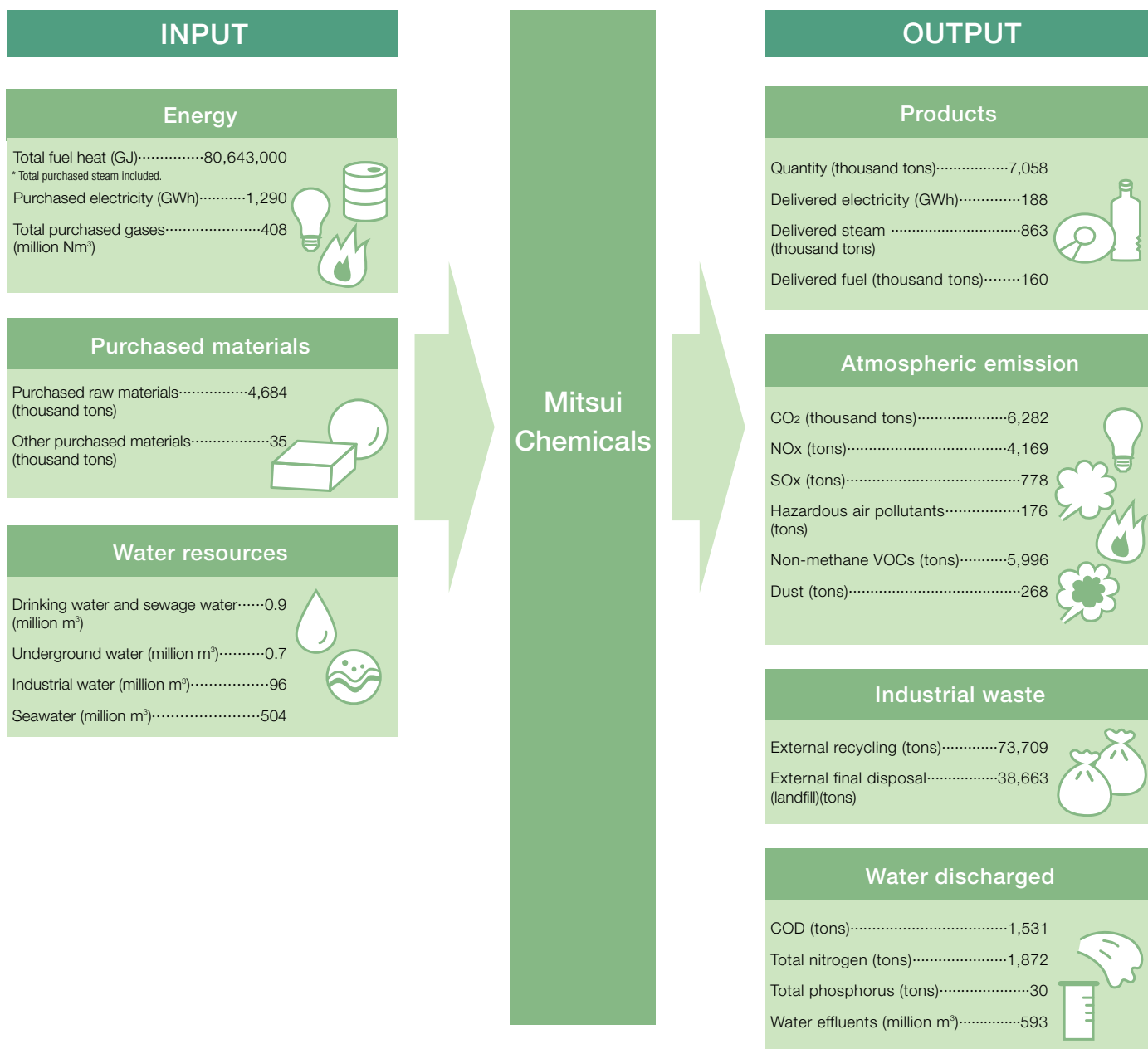


**Toshimi Hachimori**  
Managing Executive Officer:  
Deputy Center Executive,  
Production & Technology  
Center

# Environmental Impacts of Mitsui Chemicals

## — Business Activities Covered by RC Management —

Specified below are the kinds and quantities of raw materials, ingredients and energy used, and resulting products, wastes, and emissions, which summarize Mitsui Chemicals' fiscal 2004 business activities covered by RC management. Please note that the actual figures shown indicate significant quantities. In the New Medium-Term Business Plan starting in fiscal 2004, Mitsui Chemicals is instituting a shift from "expansion of quantities manufactured" to "quality of manufacture," with the aim of streamlining our management efficiency.



# RC Management

The Mitsui Chemicals Group is implementing group-wide RC initiatives to harmonize its operations with the global environment, as advocated in its Corporate Mission. We are working to secure facility safety, product safety, and employees' safety and health, and to reduce our environmental load. We can meet these goals by conducting RC management based on accurate and complete information.

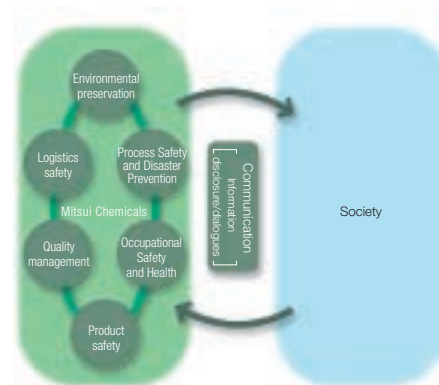
## RC Management System

RC is an integral part of our business philosophy and corporate mission. We have linked RC with other objectives to establish a unified management system.

We promote RC activities in many areas: environmental preservation; process safety and disaster prevention; occupational safety and health; product safety; quality management; logistics safety; and social communication. We are working proactively to comply with legal regulations. We minimize risks and disclose related information through a management system integrating an environmental management system (ISO 14001), a quality management system (ISO 9001: year 2000 version), and an occupational safety and health management system (OHSAS 18001). Our goal is to attain sustainable development.

We are enacting the "plan, do, check, and act" (PDCA) cycle based on the RC management system in-house to maximize social contributions and minimize potential risks. We will encourage our subsidiaries and affiliates to do the same so as to promote RC activities throughout the Mitsui Chemicals Group.

■ Relationship between Mitsui Chemicals' RC management system and society



## RC Promotion System

We promote RC activities under the supervision of the RC Committee, which is chaired by the director, in accordance with the CSR (Social Contribution) Committee Rules. Meetings take place twice a year as stipulated in the RC Rules to draft policies, strategies and plans concerning company-wide RC activities, evaluate performance, and review the system. Administrators of RC promotion (general managers) lead the activities in each department.

### ■ RC Committee

The RC Committee comprises the following:

Chair: Designated director for RC Committee

Vice-chair: Designated director for occupational health

Members: Deputy Center Executive of Production & Technology Center, Purchasing Division, Managing Executive Officer in deputy charge of logistics, general managers of works, General Managers of Planning & Coordination Divisions of Business Groups, Center Executive of R & D Center, General Manager of Logistics Division, General Manager of Human Resources & Employee Relations Division, General Manager of Production & Technology Division, General Manager of CSR Division, General Manager of Environment, Safety & Quality Division

Secretariat: Environment, Safety & Quality Division

The RC Committee has four major tasks:

- (1) To draft policies, strategies, plans, and measures concerning RC activities across the entire company
- (2) To evaluate company-wide RC performance, and to notify the facts and raise awareness of company-wide RC activities among employees
- (3) To evaluate RC audit results
- (4) To discuss important matters, including reviews of the RC system

### ■ RC implementation items

	Research & development	Manufacturing	Sales & distribution	Use and final disposal
Implementation items	<ul style="list-style-type: none"> <li>Development of processes which pose a lower environmental load</li> <li>Development of products which pose a lower environmental load</li> <li>Safety evaluation of new products</li> <li>Reporting and registration of new chemicals</li> <li>Inspections of safety technology</li> <li>Product Safety Technology Evaluation Meetings</li> <li>Zero labor accidents</li> <li>Health management</li> <li>Improving product quality</li> <li>Quality management education</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of environmental burden</li> <li>Safety evaluation of substances discharged into the environment</li> <li>Safety evaluation at time of new installation or change of use</li> <li>Inspections of safety technology</li> <li>Sharing information on accident case reports</li> <li>Educational programs for heritage of safety technology</li> <li>Technology Evaluation Meetings</li> <li>Zero labor accidents</li> <li>Health management</li> <li>Contractor management</li> <li>Caring for quality (prevention of recurrent complaints)</li> </ul>	<ul style="list-style-type: none"> <li>Providing safety information (MSDS, labels and yellow cards)</li> <li>Safety evaluation at time of change of use</li> <li>Establishment of emergency system and training</li> </ul>	<ul style="list-style-type: none"> <li>Providing safety information (MSDS, technical information, etc.)</li> <li>Recycling</li> <li>Safety evaluation at time of change of use</li> <li>Safety evaluation at time of disposal</li> <li>Reduction of complaints</li> </ul>
	Communication with society			

■ Flow of the RC management system



### Comment from Manager

In the increasingly severe business environment, we must maintain a strong effort in R&D and production technologies in order to protect our competitive lead. Nevertheless, we cannot realize a strong and excellent Mitsui Chemicals Group unless we fulfill our social responsibilities as a member of society. In the last several years, people's sense of values regarding social contribution has changed dramatically. Many companies have failed due to their inability to follow these trends.

We must be vigilant against falling behind the rest of society in terms of our sense of values. There is no substitute for swift adaptation to the changes in the social environment. We see this as the core of RC management.



**Naotaka Fujimura**  
General Manager  
Environment,  
Safety & Quality Division

## Acquiring International Standard Certifications

Mitsui Chemicals has acquired certifications under international standards for some RC implementation items: Quality management, environmental preservation, and occupational safety and health. All works have been certified under ISO 9001 (year 2000 version), ISO 14001, and OHSAS 18001.

The Mitsui Chemicals Group has promoted certification by ISO 9001 (year 2000 version) and ISO 14001 international standards at domestic and overseas group companies. The following table shows the status of certifications and RC audit results at group companies.

### Status of international certifications and RC audit results at group companies

Country	Name of company	Status of certifications			RC audit category
		ISO 9001	ISO 14001	OHSAS 18001	
Japan	SHIMONOSEKI MITSUI CHEMICALS, INC.	○	○	-	Quality Environment & safety
	MITSUMI KAGAKU FINE CHEMICALS, INC.	-	-	-	Quality Environment & safety
	SUNREX INDUSTRY CO., LTD.	○	Planned (FY 2005)	-	Quality Environment & safety
	SANTO CHEMICALS, INC.	○	-	-	Quality Environment & safety
	SANCHU CHEMICALS, INC.	○	-	-	Quality Environment & safety
	MITSUMI KAGAKU PLATECH CO., LTD. (Anjo)	Planned (FY 2006)	○	-	Quality Environment & safety
	SAXIN CORPORATION	Planned (FY 2005)	Planned (FY 2007)	Planned (FY 2008)	Quality Environment & safety
	TOHOKU ULROID INDUSTRY CO., LTD.	-	-	-	Quality (documents) Environment & safety
	PRINTEC CO., LTD.	○	○	-	Quality Environment & safety
	HI-SHEET INDUSTRIES, LTD.	○	-	-	Environment & safety
	NIPPON CORROSION RESISTANT MATERIAL CO., LTD.	-	-	-	Quality Environment & safety
	MITSUMI CHEMICAL INDUSTRIAL PRODUCTS, LTD.	○	○	-	Quality Environment & safety
	HOKKAIDO MITSUI CHEMICALS, INC.	○	Planned (FY 2005)	-	Quality (documents) Environment & safety
	KASHIMA FACTORY OF MITSUI TAKEDA CHEMICALS, INC.	○	○	-	Quality (documents) Environment & safety
	SHIMIZU FACTORY OF MITSUI TAKEDA CHEMICALS, INC.	○	○	-	Quality (documents) Environment & safety
	TOKUYAMA FACTORY OF MITSUI TAKEDA CHEMICALS, INC.	○	○	-	Quality (documents) Environment & safety
	TOYO BEAUTY SUPPLY CORPORATION	-	-	-	Quality Environment & safety
United States	NIPPON ALUMINUM ALKYLs, LTD.	-	-	-	Quality (documents)
	MITSUMI CHEMICALS AMERICA, INC.	-	-	-	Quality
	ACP	○	○	○	Quality
	ADC	○	Planned (FY 2005)	-	Auditing not performed in fiscal 2004
Europe	ESCO	○	-	-	Quality
	MITSUMI CHEMICALS EUROPE GmbH.	-	-	-	Quality
Indonesia	MEC	Planned (FY 2006)	-	-	Auditing not performed in fiscal 2004
	AMI	○	Planned (FY 2005)	-	Auditing not performed in fiscal 2004
	PNR	Planned (FY 2006)	Planned (FY 2008)	-	Auditing not performed in fiscal 2004
	ARUKI	Planned (FY 2005)	-	-	Environment & safety
Thailand	EPC	○	○	Planned (FY 2005)	Environment & safety
	GSC	○	○	-	Environment & safety
	SMPC	○	○	○	Environment & safety
	TMSC	○	Planned (FY 2005)	-	Environment & safety
	MHM	○	Planned (FY 2005)	-	Environment & safety
	TPRC	Planned	Planned	-	Environment & safety
Singapore	MTK	○	○	-	Environment & safety
	MELS	○	○	Planned (FY 2005)	Environment & safety
	MBS/MPHS	○	-	-	Environment & safety

## RC Audits of Subsidiaries and Affiliates

At Mitsui Chemicals, extensive audits of its subsidiaries and affiliates concerning RC-related activities are conducted by the Affiliates Coordination Division and the Environment, Safety & Quality Division. They conduct investigations and evaluations of the current environment, safety and quality management; they provide advice and guidance concerning remedial measures for the efforts at each company; and they facilitate exchange of RC-related information. Additionally, these audits ensure sharing of information on excellent activities of individual companies. In fiscal 2004, a total of 33 subsidiaries or affiliates were audited. ESCO and MBS/MPHS are planning to introduce an RC management system in fiscal 2005.

## Implementing Internal RC Audit

The internal RC audit of Mitsui Chemicals' works and R&D center laboratories consists of EHS and quality audits. Individual works (including subsidiaries and affiliates on their premises) and laboratories are audited for the accomplishment of respective annual goals as directed in the audit rules. The director, the managers of relevant departments, and other internal RC authorities conduct the internal RC audit at least once every year. Individual business groups are also audited as necessary. In fiscal 2003, we instituted an auditing program for legal compliance, based on what we had learned from problems discovered in autonomous inspections of safety practices according to the High-Pressure Gas Safety Law. Additionally, hearings and opinion exchange meetings by RC personnel are conducted. The fiscal 2004 RC audit included a check of the status of wastewater management considering the high risk.

### RC audit suggestions by site

Works	Item	Suggestions
Ichihara Works	Key issues Wastewater management	Steadily and systematically implement safety assessments for existing facilities by HAZOP* Preferentially enhance your facilities and establish management criteria to enable early detection of wastewater abnormalities at source points.
Nagoya Works	Key issues Wastewater management	Some of your operations involve direct exposure to rotating equipment, subject to obtaining permission from supervisors. Assess the risk of such operations and take appropriate measures for highly risky operations. Your system for early detection of abnormalities of general wastewater is inadequate. Assess the risks and institute remedial measures against wastewater abnormalities throughout your works.
Osaka Works	Key issues Wastewater management	Discuss common issues concerning the causes of accidents, claims, etc., to identify weak points of your site and share the information among all employees, to achieve a true improvement in your production site capabilities. Install analyzers and construct an information management system to constantly and accurately follow the wastewater information for individual plants.
Iwakuni-Ohtake Works	Key issues Wastewater management	Your efforts for simplification of factory activities are tardy. Speed the project up, in conjunction with your activities to promote manufacturing operations (MKI campaign). Review the wastewater management systems of individual plants and take remedial measures if necessary, to ensure early detection of abnormal wastewater.
Omura Works	Key issues Wastewater management	Review the implementation of your educational programs concerning legal compliance at individual departments. If it is found inadequate, incorporate a new program in the fiscal 2005 annual plans. Consider updating your wastewater management facilities to ensure early detection of abnormalities. Create a complete account of your wastewater emergency system for the entire factory.
Sodegaura Center	Key issues Wastewater management	The incidence of minor injuries, fires and accidents due to human error has increased. Conduct more effective preventive activities for the conditions in each laboratory. Accurately follow the actual capacity of your wastewater treatment facilities and implement appropriate measures fitting the current and future wastewater load.

\* HAZOP: An abbreviation for Hazard and Operability Studies. This is a system for systematically identifying the potential hazards of any deviations of various operating conditions (temperature, pressure, flow rate, etc.) from preset normal levels, and implementing appropriate safety measures.

# Fiscal 2004 Results and Fiscal 2005 Goals

One of Mitsui Chemicals' themes is Caring for the environment, safety and quality. This is one of the basic strategies of our management. To this end, we have formulated business plans for each RC item. Described below are goals and results for fiscal 2004 activities and planned efforts for fiscal 2005.

Field	FY 2004		
	Strategic issues	Goals	
Environmental preservation	• Elimination of environmental accidents	• Zero environmental accidents	•
	• Preventing and reducing air and water pollution	• Maintaining and improving air and water quality in terms of SOx, COD and others	•
	• Preventing global warming	• Reducing energy unit consumption to 90% by fiscal 2010 compared to the fiscal 1990 level	•
	• Reducing PRTR Law-specified substances	• Reducing hazardous air pollutants	•
	• Reduce industrial waste discarded in landfills	• Reducing landfill disposal to 25,400 tons in fiscal 2004	•
	• Implementing risk communication	• Implementing risk communication that earns social trust	•
Occupational Safety	• Eliminating labor accidents	• Zero labor accidents	•
	• Reducing risks with occupational safety and health management systems	• OHSAS 18001 certification at all works • Risk assessment systems to subsidiaries and affiliates	•
Occupational Health	• Prevention of mental health problems	• Decreasing the number of days of lost-time mental symptoms (compared to fiscal 2003)	•
	• Prevention of lifestyle-related diseases	• Decreasing morbidity (compared to fiscal 2003)	•
	• Reducing health risks associated with hazardous factors at workplaces	• Decreasing health risks (compared to fiscal 2003) Unifying occupational health criteria throughout the company.	•
Process Safety and Disaster Prevention	• Elimination of equipment accidents	• Zero equipment accidents	•
	• Identifying and eliminating hazards systematically	• Inspecting two plants at each works	•
Safety for Customers and Consumers	• Enhancing the product safety management system while responding to the changes in our environment	• Design of a database for safety information to support company-wide RC activities • Collect and review safety information on HPV chemicals*	• •
Quality Management	• Enhancing efforts for prevention of PL-related accidents	• Zero PL-related accidents	•
	• Reducing claims and complaints	• Reducing claims by 30% below the previous year • Reduce complaints by 10% below the previous year	•
Logistics Safety	• Enhancing activities for elimination of labor and other accidents	• No logistics accidents	•
RC Activities at Subsidiaries and Affiliates	• Constructing RC promotion systems for subsidiaries and affiliates	• Ensuring voluntary implementation of plan, do, check, and act (PDCA) procedures in RC activities at subsidiaries and affiliates	•
Legal Compliance	• Strict compliance with laws and regulations	• No violations of laws	•

\* Participating in the High Production Volume (HPV) Chemicals Inspection Program

### Overview of Efforts in Fiscal 2004

In fiscal 2004, as in the previous year, we experienced no accidents or other unwanted events concerning environmental preservation. Risk communication programs, including this RC report, were implemented on schedule. Regarding occupational health, we promoted risk reductions and unified occupational health criteria throughout the company. As for quality management, no PL-related accidents occurred, as in fiscal 2003, and claims and complaints decreased by 11%. Legal compliance audits were implemented by the head office auditing group to ensure legal compliance.

Although these good results were obtained, we could not clear the numerical target for reduction of the amount of industrial waste going into landfill disposal. Additionally, we had 19 labor accidents, a slight increase compared to the fiscal 2003 level, and four equipment accidents occurred. We will identify and analyze the causes of these accidents and use those findings to achieve further improvements in fiscal 2005.

Results	Rating	FY 2005 planned efforts	Refer to
No accidents occurred.		• Maintaining and improving environmental management	—
Emissions of designated substances were well beneath the legal control levels and numerical targets specified by pollution prevention agreements with local governments.		• Maintaining and improving environmental preservation management • Implementing individual load reduction plans	28-31
Energy unit consumption decreased to 88.5% of the fiscal 1990 level, clearing the numerical target, in fiscal 2004. Greenhouse gas emissions increased, compared to the fiscal 1990 level.		• Formulating greenhouse gas emissions reduction policy and plan • Accurately determining emissions for the entire Mitsui Chemicals Group and establishing a dedicated team	29,31
Increased compared to the previous year for 2 of the 10 substances covered. For vinyl chloride monomer, in particular, a new emission source was discovered and known emissions increased significantly.		• Formulating policy and plan on reduction of emissions of volatile organic compounds (VOCs), including hazardous air pollutants	28-29
Although landfill disposal amounted to 38,582 tons in fiscal 2004, a reduction of 3,217 tons compared to the previous year, the fiscal 2004 goal (25,407 tons) was not accomplished.		• Formulating a new load reduction target and policy toward the Zero-Emissions goal • Reconsidering and implementing individual load reduction plans	30-31
The following activities were conducted: - RC Report was issued. - Public relations magazines were issued, we participated in local communication meetings, and plant tours were held at all domestic works. - The "Local Advisor" system was established.		• Shifting from RC reports to CSR reports • Enhancing risk communication at works	12-15
Nineteen labor accidents occurred (17 in fiscal 2003). Although a company-wide safety campaign was implemented to prevent safety practices from falling into habits, only a few of our works put it into practice.		• Formalizing various activities in a safety campaign • Evaluating and improving workplace culture by external safety diagnosis • Drafting and implementing measures incorporating the concepts of punishment and reward.	32-33,45
All five works were certified, and 10 subsidiaries or affiliates introduced a risk assessment system. At each works, risk reduction programs were implemented on schedule according to safety risk assessments, and risk assessments and education matching the actual situations at each site were conducted by external consultants.		• Steadily reducing labor accident risks by incorporating routine safety risk assessments that match the actual situation in each site	
The number of days lost due to mental symptoms increased slightly. Mental health education was provided steadily, an e-learning system was established as a measure to strengthen employees' responses to stress, and feedback on the results of workplace stress tests was provided.		• Formulating workplace stress reduction (communication enhancement) plans based on workplace stress tests • Implementing the new e-learning system for newly recruited employees	
Morbidity decreased compared to fiscal 2003. Morbidity decreased for obesity, cholesterol, diabetes, and $\gamma$ -GTP but increased slightly for blood pressure.		• Enhancing health guidance following medical check-ups • Implementing an internet-based self-learning lifestyle improvement program by way of trial	34
Health risks decreased and occupational health criteria were unified throughout the company. Cases of risk levels 3, 4 and 5 decreased and new company-wide occupational health criteria were established.		• Steadily implementing occupational health measures in line with the new criteria • Further reducing health risks • Providing support for occupational health risk reduction at domestic and overseas subsidiaries and affiliates	
Four equipment accidents occurred (3 in fiscal 2003). Residue ignited during treatment, an oxygen gas strainer was damaged due to burning, a minor fire occurred due to a leak of hot oil, and modifier gas leaked from a modification furnace.		• Implementing re-inspections and remedial measures for safety technology • Enhancing human resources development for safety technology (Increasing the number of contract researchers sent to safety engineering university and fostering workplace safety engineers) • Reconsidering the safety engineering system	
At least two plants were inspected at each works. Inspections were performed for static electricity sources, explosive air-chemical mixtures, toxic gases, blending reaction hazards, etc.		• Enhancing the product safety assessment system • Developing a database for safety data to support company-wide RC activities • Appropriately responding to new chemicals legislations such as REACH and GHS	36-39
A database for safety information to support company-wide RC activities was designed. Regarding efforts for high production volume (HPV) chemicals, one additional substance was chosen and data are being compiled (report in preparation, 70% complete).			
No PL-related accidents occurred. Audits on manufacturing and logistics contractors and PL education (business groups, branches, works, R&D center) were performed on schedule.		• Continuing to audit manufacturing and logistics contractors • Continuing to provide PL education • Identifying and eliminating potential factors in quality issues	35
Claims and complaints decreased by 10%. Although a 11% reduction was achieved on a company-wide basis, some business groups remain unable to clear their numerical targets.		• Identifying and eliminating weak points in the supply chain for products characterized by high incidences of claims and complaints.	
No logistics accidents occurred; three minor injuries occurred; two potential accident events occurred. When the minor injuries and potential accident cases occurred, appropriate measures were taken to prevent repeats.		• Enhancing RC management for logistics subsidiaries and affiliates and logistics contractors	40
Promotion of RC at contractors was confirmed by audits etc. Based on self-assessments of RC management levels, environmental safety audits (26 companies) and quality audits (19 companies) were conducted.		• Enhancing guidance according to RC management level at each subsidiary or affiliate • Providing guidance on occupational safety risk assessment; incorporating self-assessments of RC management levels into routine and auditing them.	17,22, 31,34
Implementing legal compliance audits by the head office auditing group Audits concerning the High-Pressure Gas Safety Law, Fire Services Law, Poisonous and Deleterious Substances Control Law, etc. were conducted by the head office auditing group. Revision of legal compliance education, ensuring implementation Headings and topics of company-wide legal compliance education were revised; employees were ensured to be involved in educational programs.		• Implementing and enhancing legal compliance audits concerning the three safety laws (High-Pressure Gas Safety Law, Fire Services Law, Industrial Safety and Health Law), Poisonous and Deleterious Substances Control Law, and Water Pollution Control Law. (Implementing legal compliance audits by the head office auditing group, etc.) • Ensuring all employees to be involved in legal compliance education by e-learning system	19,34

Self-rating (percent performance): 95% or more 70% to less than 95% less than 70%

# Environmental Accounting/Assessment of Environmental Impacts

Mitsui Chemicals has introduced an environmental accounting system and is investing in environmental preservation, occupational safety and health, etc. We are making efforts for sustainable development, including introduction of eco-efficiency as the indicator of a good balance between economic benefit and environmental load.

## Environmental Accounting

Mitsui Chemicals has made significant investments in RC activities, including environmental preservation and occupational safety and health. This year's report presents environmental accounting data on our investments and actual expenses for environmental preservation, and our investments in occupational safety, disaster prevention, and health.

### Fiscal 2004 Results

The investments in environmental preservation amounted to approximately 2.6 billion yen and the expenses amounted to approximately 18.1 billion yen. The investments were spent to take measures against hydrocarbons released into the atmosphere, to take actions against offensive odors, to reduce wastewater volume, to reduce wastewater sludge, and to restore normal conditions after environmental damage at the Nagoya Works. The economic benefit of our environmental preservation activities, including resource and energy conservation, amounted to approximately 4.8 billion yen.

The investments in measures concerning occupational safety, disaster prevention, and health amounted to approximately 1.6 billion yen, spent mainly to improve equipment to prevent fires, explosions, and labor accidents, and to implement measures against trespassing on the premises of our works.

### Accounting Methods

The environmental costs were calculated according to the "Environmental Accounting Guideline 2002" of Japan's Ministry of the Environment.

The investments in measures concerning occupational safety, disaster prevention, and health were calculated using our internal classification system.

● Scope: Mitsui Chemicals' works and subsidiaries and affiliates on their premises

● Period: Fiscal 2004 (from April 2004 to March 2005)

### ■ Environmental preservation costs

(100 million yen)

Classification		Major efforts	FY 2004	
			Investments	Expenses
1	Environmental preservation costs to reduce the environmental load of production and service activities within the business area (within-business-area costs)		22	132
	1-1) Cost of preventing pollution	Measures against VOCs released into the atmosphere, measures against offensive odors, wastewater sludge reductions, etc.	(18)	(115)
	1-2) Cost of preserving the global environment	Energy conservation equipment	(2)	(0)
	1-3) Cost of recycling resources	Waste plastic recycling	(2)	(17)
2	Costs to reduce the environmental loads occurring upstream or downstream of production and service activities (upstream/downstream costs)		–	–
3	Environmental preservation costs associated with management actions (management activity costs)	Introduction of environmental management systems, employee education, etc.	0	8
4	Environmental preservation costs associated with research and development activities (R&D costs)	Development of products and processes for environmental load reductions, etc.	0	29
5	Environmental preservation costs associated with social activities (social activity costs)	Money reserved for combating pollution, for greening, etc.	0	3
6	Costs related to environmental damage (environmental damage costs)	Environmental pollution (Nagoya Works) remediation etc.	4	9
Total			26	181

### ■ Economic benefits of environmental protection

(100 million yen)

	Classification	Major effects	Monetary benefit
1	Income from recycling	Resource recovery and waste recycling	3
2	Income from energy conservation	Energy conservation	45
3	Income from resource conservation	Improvement in specific energy consumption unit for raw materials	
Total			48

### ■ Investments concerning occupational safety, disaster prevention, and health

(100 million yen)

	Classification	Investments
1	Measures against explosions, fires, and spills	5
2	Measures against equipment deterioration over time	2
3	Measures to improve occupational safety and workplace environment	3
4	Measures against natural disasters such as earthquakes	0
5	Others	6
Total		16

## Major Environmental Improvement Projects

The following are major environmental improvement projects we have already conducted, or will conduct, in our works, from fiscal 2004 to 2005. The projects can be roughly divided into three categories: discharge volume reductions, promotion of recycling, and environmental repair. We are implementing plans, including VOC reduction and wastewater color improvement, to be completed in fiscal 2005 to 2006.

### ■ Major environmental improvement projects

Category	Project title	Works	Start of equipment operation	Investments (¥100 million)	Description	Effect
Remediation of air pollution	Measures to reduce VOCs released into the atmosphere	Ichihara	May 2004	0.8	Installing exhaust gas catalytic combustion equipment etc.	VOCs released into the atmosphere reduced by 365 tons/ year
			November 2004	0.4	Upgrading vacuum generators	VOCs released into the atmosphere reduced by 200 tons/year
			July 2006	3.6	Installing heat exchanger-equipped incinerators	VOCs released into the atmosphere reduced by 210 tons/year (work ongoing)
	Measures against soot emissions	Nagoya	July 2004	1.1	Piping modifications	Acrylonitrile discharge concentration reduced to one-sixtieth of previous level
	Reduction of VOCs in exhaust gas	Iwakuni-Ohtake	August 2005	8.3	Installing exhaust gas catalytic combustion equipment etc.	VOCs in exhaust gas reduced (work ongoing)
	Measures against offensive odors		June 2005	0.8	Installing exhaust gas catalytic combustion equipment etc.	Offensive odors mitigated (work ongoing)
Water pollution prevention etc.	Reduction of wastewater discharged from plants	Iwakuni-Ohtake	May 2005	0.1	Enhancing wastewater separation	Wastewater volume reduced by 50 tons/h
	Wastewater color improvement	Omuta	July 2005	7.1	Installing wastewater bleaching equipment	Released wastewater color improved (work ongoing)
	Reduction of wastewater sludge		October 2005	0.3	Improving neutralization method	Wastewater sludge reduced by about 2,000 tons (work ongoing)
Recycling	Promoting efficient use of waste catalysts	Iwakuni-Ohtake	May 2004	0.5	Enhancing waste catalyst recovery equipment	More still-usable waste catalysts were recovered; 370 tons of industrial waste eliminated per year
Repair	Underground water decontamination at chloride manufacturing plant site	Nagoya	November 2004	4.0	Pumping up underground water and removing volatile organic compounds	Spread of underground water pollution prevented

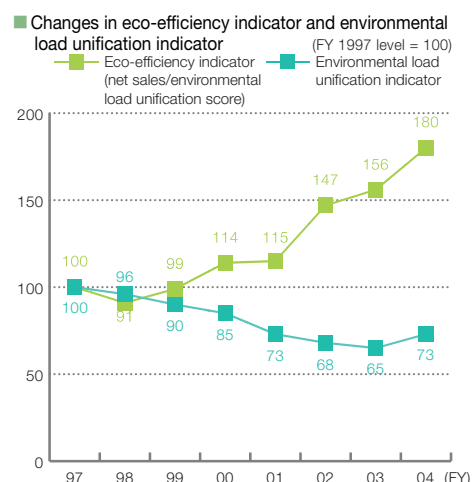
## Assessment of Environmental Impacts

### Assessing Environmental Impact of Production Activities Using Eco-efficiency

The term eco-efficiency refers to an indicator of environmental impact exerted in relation to the provision of a product or service, defined as the ratio obtained by dividing the value of the product or service by its environmental impact. We use eco-efficiency to assess the balance between environmental preservation and economy in our business activities as a whole. To determine eco-efficiency, all forms of environmental load must be unified, i.e., defined in exactly the same way. To this end, we use our own weighting coefficients determined with the panel method developed by Professor Nagata of Waseda University. We are working to manufacture more valuable products by methods with less environmental impact using the eco-efficiency indicator.

### Eco-Efficiency Evaluation for the Business Activities of Mitsui Chemicals as a Whole

The eco-efficiency of the business activities of Mitsui Chemicals as a whole is calculated by dividing the non-consolidated net sales by the unified environmental load. Compared to the level in fiscal 1997, the base year (100), the eco-efficiency indicator improved steadily to 180 in fiscal 2004. In the meantime, the environmental load increased slightly in fiscal 2004 compared to fiscal 2003. In fiscal 2004, a significant increase in net sales and an increase in the number of products sold led to increased production, hence to the increased environmental load. Still, the increase in environmental load was minimized, thanks to an increase in factory operating efficiency; as a result, the eco-efficiency improved.



# Commitment to Environmental Preservation

The Mitsui Chemicals Group is working to preserve the environment in two ways: reduction of the environmental load of our business activities, and appropriate management of chemical substances. We will continue to monitor our environmental load and make proactive efforts to preserve the global environment.

## Management of Chemical Substances and Reduction of Their Use

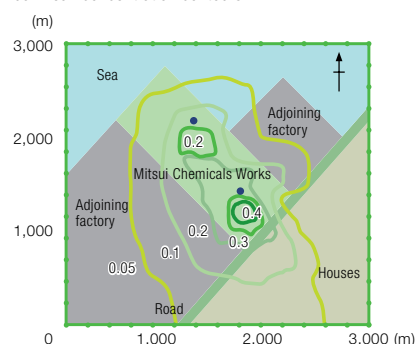
### Risk Management for Air Pollutants

Mitsui Chemicals have been managing the risks imposed by air pollutants under our Guideline for Voluntary Actions to Reduce Air Pollution Loads as instructions to our employees. The first step in managing a pollutant is to estimate the volume and range of its dispersion in the atmosphere after discharge. The annual mean concentration of the substance at the works boundary is estimated, taking account of wind direction and other weather factors. Necessary adjustments are made to maintain the concentration below the maximum allowance for human health. At the Nagoya Works, for example, we took measures to reduce propylene oxide emissions with the MOS\* indicator (for details, see description at the right).

\* MOS: (estimated concentration of test substance at works boundary)/(maximum allowable environmental concentration of test substance)

### Example Calculation of Atmospheric Dispersion of Substances Discharged into Air —Risks Estimated for Individual Substances from Weather Conditions and Other Factors—

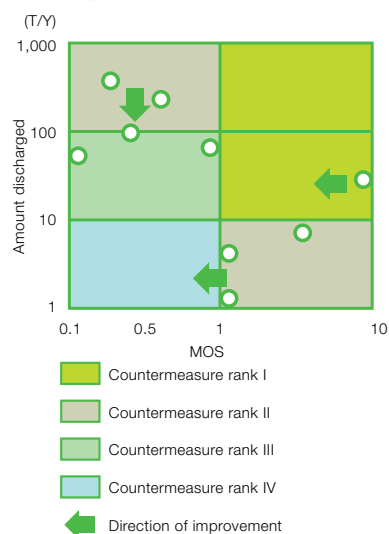
Annual mean concentration contours



<Results for Substance A>

1. Calculation formula: The METI-LIS formula used
2. Weather conditions: 2002 AMEDAS data
3. Annual mean maximum concentration at works boundary = 0.3 ppb
4. Maximum allowable environmental concentration of substance A = 0.25 ppb
5. MOS = 1.2

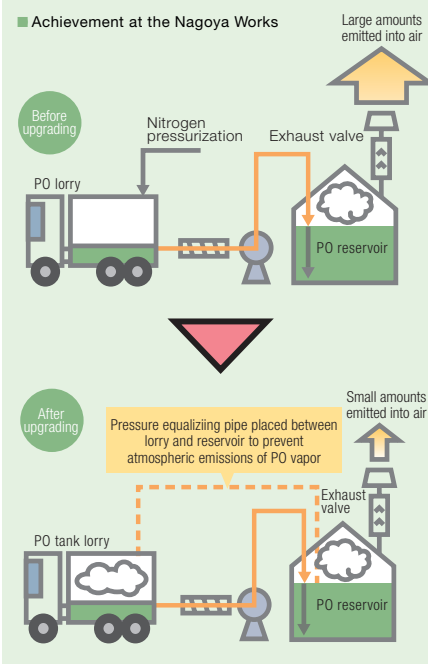
Priority ranking of countermeasures by risk assessment



### Efforts at the Nagoya Works

At the Nagoya Works, we took measures to reduce propylene oxide (PO) emissions into the atmosphere. Specifically, the PO tank exhaust system was upgraded to achieve a significant reduction in its atmospheric emissions from 31 tons/year (FY 2003) to 4.4 tons/year (FY 2004). As a result, the MOS indicator fell from 9.7 to 0.8.

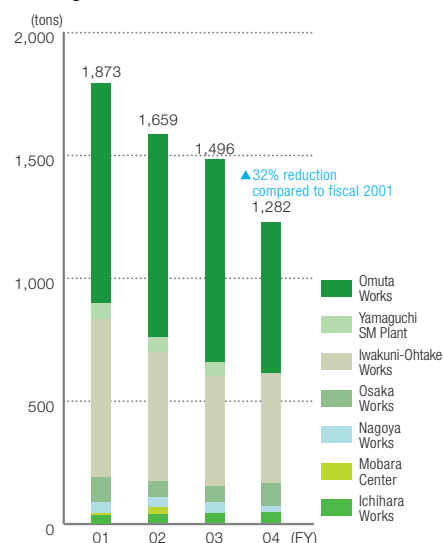
#### Achievement at the Nagoya Works



### Efforts to Comply with the PRTR Law

In June 2002, it became mandatory to notify the national government of the transfer amounts, discharges, etc. of all chemical substances designated under the Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law) (for PRTR data on each of our plants, refer to page 47). We have steadily reduced the release of designated chemical substances into the environment over the last three years; the total amount released fell by 32% in fiscal 2004 compared to fiscal 2001.

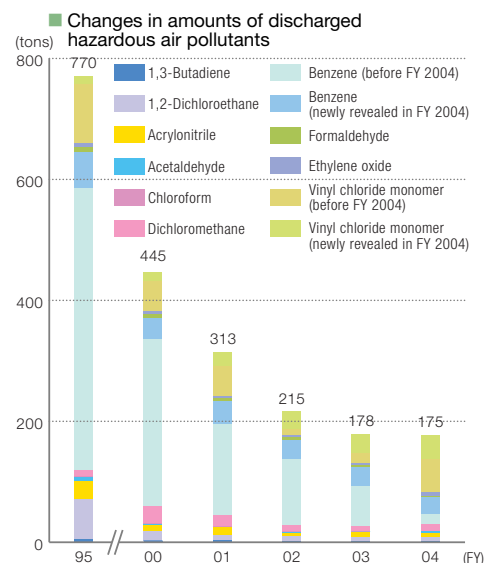
#### Changes in discharges of chemical substances designated in the PRTR Law



### Efforts to Reduce Hazardous Air Pollutants

We presently use ten substances out of the pollutants designated as high health risks in the Air Pollution Prevention Law; we have made strong efforts to reduce their use in line with our voluntary guidelines.

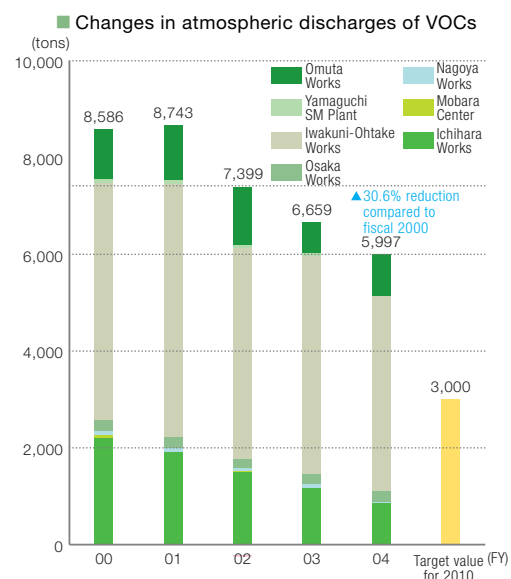
Following the transfer of the Yamaguchi SM Plant to a third party, in January 2004, the total discharge of benzene from Mitsui Chemicals facilities in fiscal 2004 was expected to decrease from the previous year's level of about 50 tons. However, the actual figure was similar to the fiscal 2003 level. A survey and analysis showed that benzene had also been discharged as a reaction byproduct at the Iwakuni-Ohtake Works. The discharge of vinyl chloride monomer increased significantly in fiscal 2004, by about 36 tons. An internal survey and analysis revealed new discharge sources, as a reaction byproduct at the Omuta Works, and also because a portion of the tank contents evaporated into the atmosphere during a legally required inspection involving opening of the tank, which is regularly conducted every three years at the Osaka Works. Remedial measures are being considered.



### Volatile Organic Compounds (VOC) Reductions

Volatile organic compounds (VOC) can decay to photochemical oxidants as they undergo photochemical reactions with atmospheric nitrogen oxides under sunlight. In May 2004, the Air Pollution Prevention Law was amended to implement regulations concerning VOC emissions. The Japanese government has set a numerical goal of reducing VOC emissions by 30% compared to fiscal 2000 levels (a calculation based on stationary sources) by the end of fiscal 2010.

We have voluntarily reduced emissions of hazardous air pollutants, substances specified by the PRTR Law, and hydrocarbons. As a result, VOC emissions were reduced by about 30% in fiscal 2004 compared to fiscal 2000. We will work to achieve further reductions toward a goal of 3,000 tons of VOC emissions by fiscal 2010.

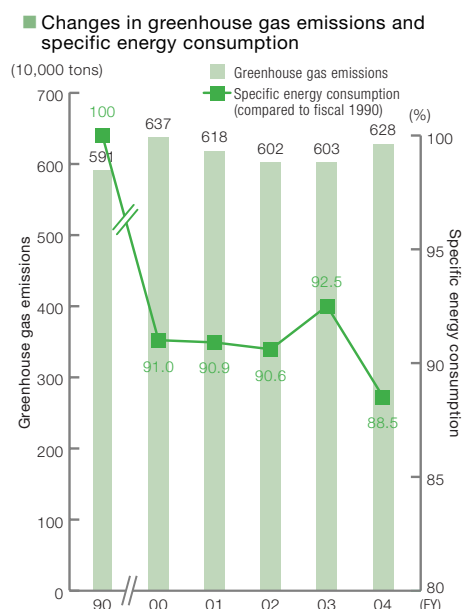


### Efforts to Prevent Global Warming

Since the 1990s, the Mitsui Chemicals Group has been striving to reduce greenhouse gas emissions to do our part in preserving the global environment. Bearing in mind that energy consumption accounts for 90% of the greenhouse gas emissions resulting from our business activities, we have emphasized energy conservation.

Greenhouse gas emissions amounted to 6.28 million tons in fiscal 2004, an increase from the fiscal 2003 level of 6.03 million tons. This was mainly because of the installation of additional polypropylene/propylene plants and increased production of ammonia at the Osaka Works. In the meantime, energy consumption per unit of production (specific energy consumption) decreased to 88.5% in fiscal 2004 compared to the fiscal 2003 level of 92.5%, an early accomplishment of the chemical industry's goal of reducing fiscal 2010 specific energy consumption to 90% of the fiscal 1990 level. This was because production increased in these prosperous days, and also because energy conservation efforts such as installation of highly efficient polypropylene plants were successful.

However, greenhouse gas emissions for the entire Mitsui Chemicals Group is still 6.3% higher than in the base year 1990. We will make firm efforts to conserve energy for reducing their emissions and, if necessary, will consider applying the Kyoto Mechanism.



\* The figures for greenhouse gas emissions were obtained by totaling energy-related CO<sub>2</sub> emissions and other emissions converted to equivalents of CO<sub>2</sub> emissions, such as process-related emissions of CO<sub>2</sub>, methane, dinitrogen monoxide, and chlorofluorocarbons.

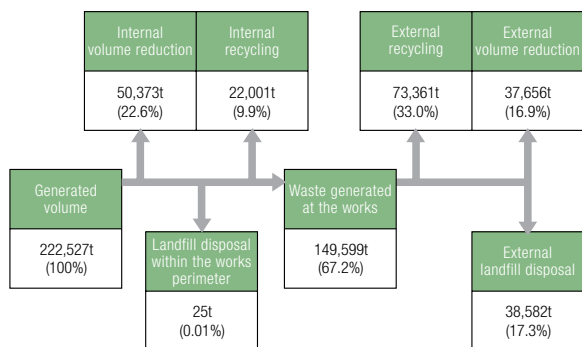
## Efforts for Waste Reduction

The Mitsui Chemicals Group has been working to reduce industrial waste as part of the group's efforts to create a recycling-oriented society. We have set the numerical target of an 80% reduction in landfill disposal volume by fiscal 2004, compared to the fiscal 1990 level. The amount of industrial waste going into landfill disposal decreased to 38,582 tons in fiscal 2004 compared to the fiscal 2003 but the target was not cleared.

In fiscal 2004, we set a new goal of accomplishing "Zero-Emissions" at all works by 2010.

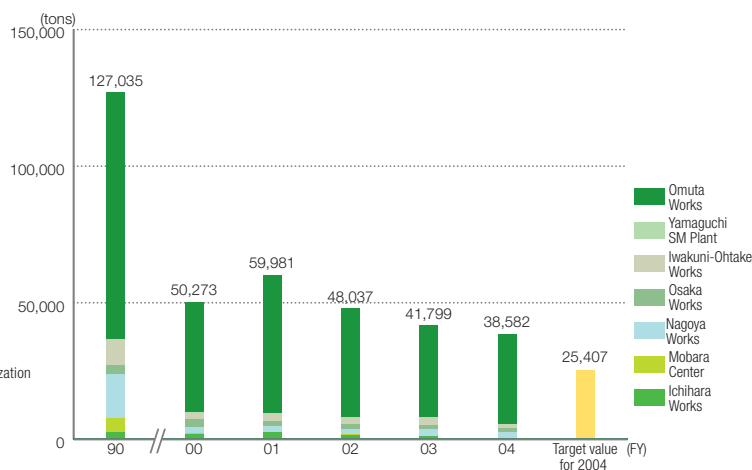
At the Mitsui Chemicals Group, "Zero-Emissions" is defined as not more than a 1% ratio of final disposal amounts in relation to the amount of industrial waste produced. As the company-wide mean ratio was 17.3% in fiscal 2004, we think the "Zero-Emissions" goal is quite high. We will strive to clear the goal.

### Waste disposal status



Internal volume reduction: Volume reduced as a result of waste plastic incineration and waste acid neutralization  
 Internal and external recycling: Value including waste plastic recycling and the fuel use of waste oil  
 Generated volume: Sum of sludge, waste plastics, dust, etc.  
 Landfill disposal at the works: All treated at the controlled landfill site of the Omuta Works  
 Figures in parentheses are final disposal rates.

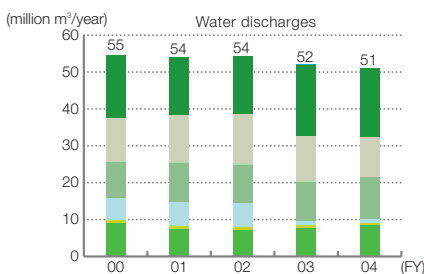
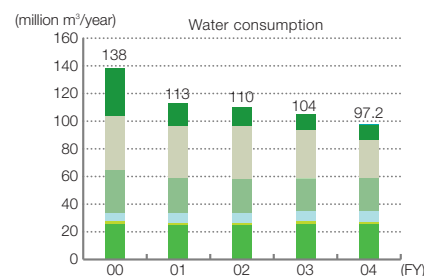
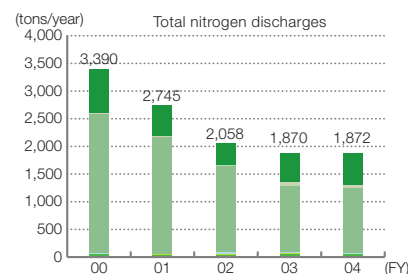
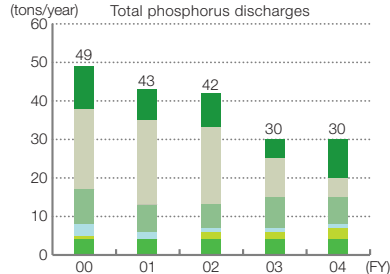
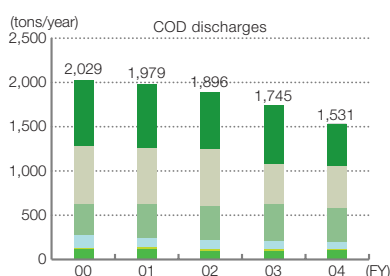
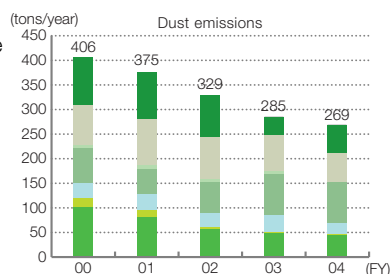
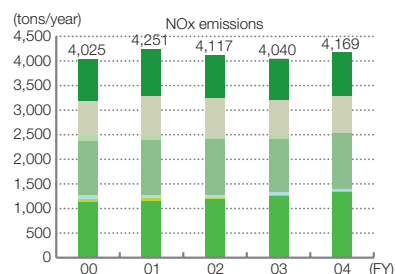
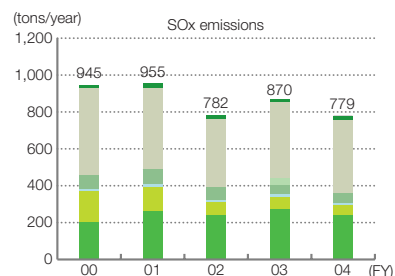
### Changes in final disposal volume of industrial waste



## Efforts to Reduce Air and Water Pollutants

The Mitsui Chemicals Group has been striving to reduce the atmospheric emissions of hazardous air pollutants such as SOx, NOx and dust, and to reduce the discharge of water pollutants such as COD, nitrogen and phosphorus. As a result, we are well beneath the regulatory control levels. We will maintain these lower levels. Please note that data on the Sodegaura Center is not shown here since it discharges only very small amounts of these substances, though data monitoring and management are conducted continuously as with the other sites.

### Environmental loads on the atmosphere and water



Legend: Omuta Works, Yamaguchi SM Plant, Iwakuni-Ohtake Works, Osaka Works, Nagoya Works, Mobara Center, Ichihara Works

## Responding to Complaints

Our works are striving to preserve complete accountability and to respond quickly to the complaints we receive from time to time. We received three complaints in fiscal 2004.

### Examples of complaints and responses

Works	Description of complaint	Response
Ichihara	Complaints of oil mist spreading into the neighboring areas and adhering to buildings during emergency release valve testing were voiced.	Emergency release valve testing pressure was reduced to prevent oil mist spread.
Osaka	Complaints of night noise from flare stack were voiced.	<ul style="list-style-type: none"> <li>Inflammable gas release was reduced to the minimum possible at night.</li> <li>Sparging steam volume was reduced to the maximum lowest level.</li> </ul>
Omuta	Complaints of night noise from the public address (PA) system announcements were voiced.	<ul style="list-style-type: none"> <li>The sound volume of the PA system was decreased.</li> <li>Noise is monitored regularly.</li> </ul>

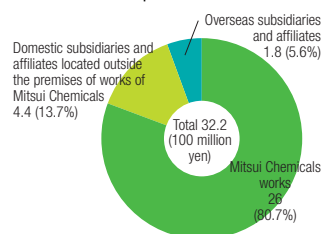
## Efforts for Environmental Preservation by Subsidiaries and Affiliates of Mitsui Chemicals

The environmental preservation data given above represent the sum of the data for Mitsui Chemicals and the data for subsidiaries and affiliates located on the premises of works of Mitsui Chemicals. Described below are fiscal 2004 data for off-site domestic and overseas subsidiaries and affiliates which have manufacturing departments and capital ratios exceeding 50%. We will continue to compile data for these organizations.

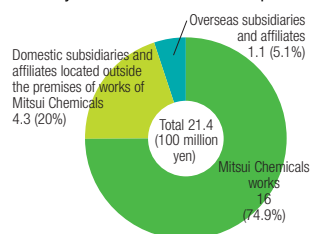
The number of employees of off-site subsidiaries and affiliates is 3,082 in Japan and 1,855 overseas. Together, they account for about 40% of the employees of the Mitsui Chemicals Group as a whole. Many of the domestic off-site subsidiaries and affiliates are involved in processing Mitsui Chemicals' products to increase their added value, whereas most of the off-site overseas subsidiaries and affiliates are high-volume manufacturers of general-purpose chemical products.

The greenhouse gas emissions for these domestic and overseas subsidiaries and affiliates account for 13.8% of the total emissions for the entire Mitsui Chemicals Group. We will reduce greenhouse gas emissions not only for Mitsui Chemicals but also for all our subsidiaries and affiliates. We will also continue to reduce the final disposal volume of industrial waste, for which these subsidiaries and affiliates account for 19% of the total figure for our Group as a whole.

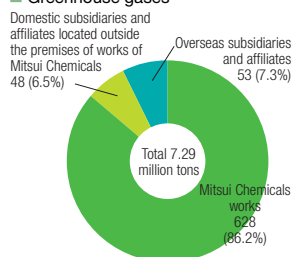
### Investments in efforts for environmental preservation



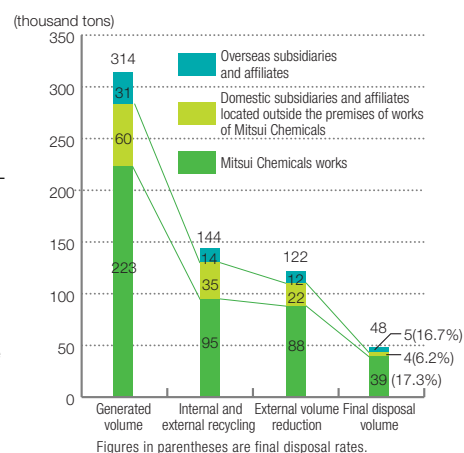
### Investments in efforts for occupational safety and health and disaster prevention



### Greenhouse gases



### Changes in final disposal volume of industrial waste



## List of subsidiaries and affiliates covered

### Domestic subsidiaries and affiliates located outside the premises of works of Mitsui Chemicals

UBE POLYPROPYLENE LIMITED COMPANY; TOHCELLO CO., LTD.; SHIMONOSEKI MITSUI CHEMICALS, INC.; TOYO PHOSPHORIC ACID, INC.; SUN ALLOYS CO., LTD.; SAXIN CORPORATION; TOHOKU ULOID INDUSTRY CO., LTD.; HOKKAIDO MITSUI CHEMICALS, INC.; MITSUI TAKEDA CHEMICALS, INC.; MOLDING AND COMPOUNDING INDUSTRIES, LTD.; HOKUTO INDUSTRY, LTD.; CHIBA POLYOL CORPORATION; JAPAN COMPOSITE CO., LTD.; SANTOU CHEMICALS, INC.; SANCHU CHEMICALS, INC.; SUNREX INDUSTRY CO., LTD.; HI-SHEET INDUSTRIES, LTD.; MITSUI CHEMICALS PLATEC; MITSUI FINE CHEMICALS, INC.; SUN MEDICAL CO., LTD.; TOYO BEAUTY SUPPLY CORPORATION; PRINTEC CO., LTD.; MITSUI TOATSU AGRICULTURAL CHEMICALS, INC.; MITSUI CHEMICAL INDUSTRIAL PRODUCTS, LTD.; MCI LOGISTICS (EAST), INC.; and MCI LOGISTICS (WEST), INC. (26 companies)

### Overseas Subsidiaries and Affiliates

ACP; ACP-M; MITSUI ADVANCED COMPOSITES (ZHONGSHAN) CO., LTD.; SMP; MPHS; MBS; MELS; MTK; ARUKI; YONGSAN MITSUI CHEMICALS, INC.; MEC; TMS; ADC; TCPC; CPI; COSMO SCIENTEX; MHM; and ESCO (18 companies)

## Comments from Manager

In 2004, I was appointed as a member of the Committee on Control of VOC Emissions of Japan's Ministry of the Environment. Since then, on behalf of the chemical industry, I have been working for the committee by reporting on the actual status of VOC emissions in our industry and making proposals. This experience has been a precious opportunity for me to gain insight into how national environmental policies are formulated. I am impressed by the Ministry's regard for the opinions of industry. I will strive to help the committee formulate effective measures to reduce VOC emissions.



**Hiroyuki Ito**  
Environment, Safety  
& Quality Division

# Commitment to Occupational Safety and Health

The Mitsui Chemicals Group gives top priority to occupational safety and health. We are constantly involved in proactive efforts to prevent process accidents and labor accidents, and in a continual process to develop an appropriate work environment and promote our employees' voluntary activities to stay healthy. Aiming at prevention of labor accidents and health damage, we are working to identify, evaluate and mitigate potential hazards in occupational safety and health.

## Commitment to Occupational Safety

We are striving to prevent labor accidents by conducting safety activities to create as safe a workplace as possible, based on our occupational safety and health management system. An integral part of this program is to raise employees' awareness of safety, including human factors, and to improve risk responsiveness at our facilities.

In fiscal 2004, we implemented a company-wide safety campaign to secure our occupational safety and health management system. It is essential not to fall into a rut or to stereotype risks. We have developed and now operate a labor accident database for sharing by all of the group companies.

## Occupational Safety and Health Management System

In fiscal 2001, we began to seek certification under an occupational safety and health management system (OHSAS 18001) to prevent accidents by identifying workplace hazards and evaluating risks to reduce the likelihood of accidents from the hazards; all of our five works were certified by fiscal 2004.

Safety risk levels of all labor operations are determined using a five-level scoring system taking into account two factors: magnitude of damage (severity of injury) and probability of damage (likelihood of suffering). At the end of fiscal 2004, 267,558 cases were examined, of which 493 (0.18%) were rated as risk levels V or IV, which represent unacceptable levels. Immediate measures are taken to reduce the risk levels for these quite hazardous operations. We are planning to mitigate the dangers in operations rated at level III, which represents risks to be controlled systematically.

In fiscal 2004, a total of nine safety training sessions were provided by invited consultants at various sites to allow continuous risk assessments suitable for the actual operations at the workplaces. We began introducing a risk assessment system based on the same concept to subsidiaries and affiliates.

## Maintaining Vigilance

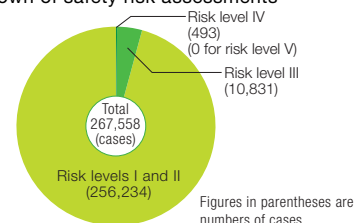
We implemented a company-wide safety campaign to encourage vigilance against potential risks. We promote voluntary efforts of employees and urge supervisors to maintain good communications with employees, including contractors, especially when giving instructions, and to secure their actions of reporting, notification and consultation. We have also invited external lecturers to provide training sessions to raise awareness of safety.

The company-wide campaign aims at reviewing and systematizing all of our ongoing safety activities to motivate all employees of Mitsui Chemicals and contractors to be involved in safety activities. Each works reviewed and systematized their safety activities, and the results were reported to all employees. In fiscal 2005, we will incorporate this campaign into our schedule as a regular event.

## Developing and Operating a Company-wide Labor Accident Database

We have developed and updated a labor accident database for sharing by all of the group companies. It allows searchable access to information on labor accidents that occurred in our subsidiaries and affiliates. We will expand the database by adding data for past labor accidents.

## Breakdown of safety risk assessments



## Risk level table

Risk level	Measures
V	Take immediate measures or discontinue operation.
IV	Take measures within a given period.
III	Draft measures within a given period and implement them systematically.
II	Equipment upgrading is unnecessary. Improve procedures as appropriate.
I	No action is necessary.

## Comment from Manager

It wrings my heart to think about the suffering and burdens borne by the victim of a labor accident, his or her family, colleagues, and the company. At my current position, I will work to formulate programs that promote steady safety activities at manufacturing sites and enhance awareness of safety. We will put priority on minimizing the potential hazards of labor accidents and securing a workplace environment where employees can work with confidence.

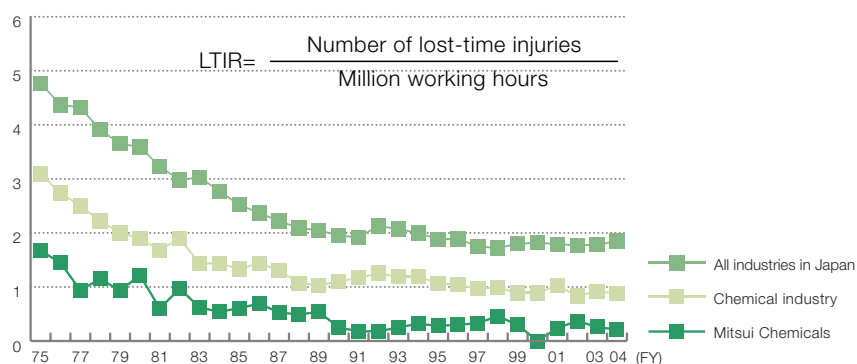
**Hideki Umehara**  
Environment,  
Safety & Quality Division



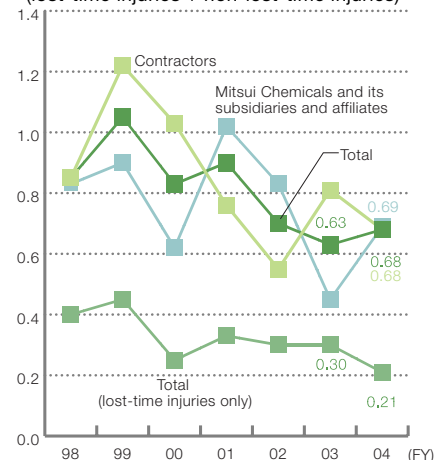
## Status of Occurrence of Labor Accidents

The lost-time injury rate (LTIR) is approaching a bottom in the chemical industry and in all manufacturing industries as a whole. This is also true for Mitsui Chemicals. The fiscal 2004 labor injury rate (lost-time injuries + non-lost-time injuries, including contractors) was 0.68, a slight increase from the fiscal 2003 level of 0.63. The LTIR decreased to 0.21 from the fiscal 2003 level of 0.30. Most of the non-lost-time injuries were caused by human factors associated with a lack of awareness of risks or decreased attention. Regarding types of labor accidents, accidents in which workers were caught in machines decreased and cuts and bruises increased, compared to the previous year.

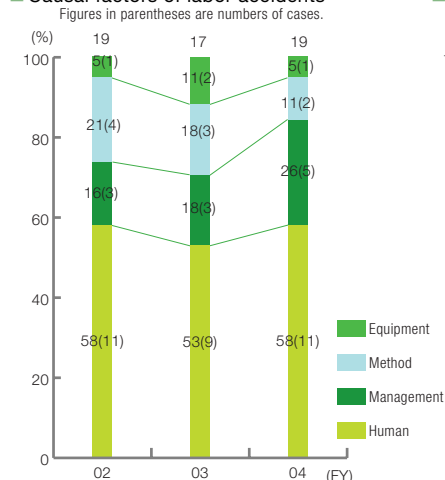
## Changes in lost-time injury rate (LTIR)



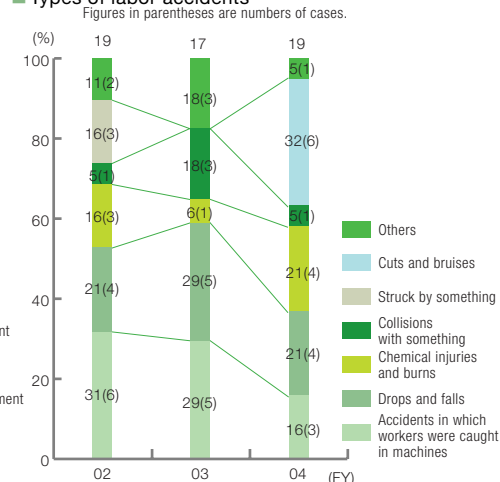
### Changes in injury rate (lost-time injuries + non-lost-time injuries)



### Causal factors of labor accidents



### Types of labor accidents



## Commitment to Occupational Health

Our philosophy in implementing our health measures is that "Employees' health is linked directly to corporate soundness" (Occupational Health Rules). We have health management offices at the head office, Sodegaura Center, and all five works, where exclusively contracted industrial doctors, public health nurses, and full-time health managers are available. Our health measures are implemented in cooperation between the Human Resources & Employee Relations Division and the Environment, Safety & Quality Division.

### Managing and Improving Workplace Environment

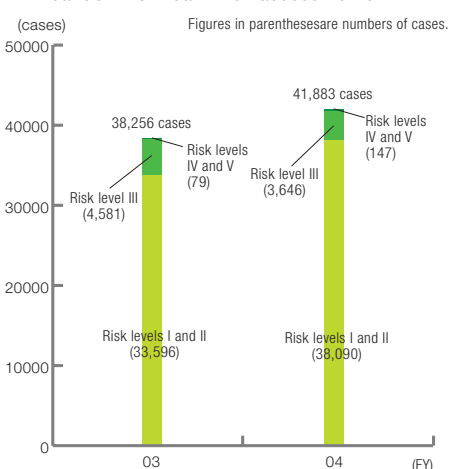
Mitsui Chemicals is determined to provide its employees with a suitable work environment. We take precise environmental measurements and evaluate the results with the goal of eliminating all unnecessary hazards. In fiscal 2004, we reconsidered our criteria of workplace environmental management and equipment throughout the company to ensure stricter responses to such hazards.

Since 2003, we have been conducting efforts to identify, assess and mitigate risks concerning occupational health in accordance with our occupational safety and health management system introduced to all of our five domestic works. Health risk<sup>\*1</sup> levels of all labor operations are determined using a five-grade scoring system. The scores were calculated by this formula: magnitude of damage (harmfulness) x exposure risk factors (work frequency, handling volume and tendency of harmful substance to spread in the air, workplace environment and equipment status) (see the risk level table on previous page). The fiscal 2004 health risk assessment revealed an increase from 38,256 to 41,883 in the total number of cases examined with the expansion of coverage by the management system. We believe that this will help to prevent manifestation of potential hazards in health damage. It is vital to improve our channels for risk communications at each workplace to reduce occupational health risks. We are striving to enhance our efforts with workplace patrols by industrial doctors and health managers. The administration is also designating smoking and non-smoking areas and establishing rules for VDT<sup>\*2</sup> work.

<sup>\*1</sup> Health risks: Chemical burns, contact poisoning with hazardous substances, VDT work, reactions/unnatural motions, noise hazards, radiation sickness

<sup>\*2</sup> VDT: An abbreviation for Visual Display Terminals, which consist of a display and keyboard for a computer.

### Breakdown of health risk assessments



### Workplace environment measurements

Figures in parentheses are fiscal 2003 data.

Harmful environment	Number of measuring points	Management level I	Management level II	Management level III
Ordinance on Prevention of Organic Solvent Poisoning	133(110)	133(110)	0	0
Ordinance on Prevention of Hazards Due to Specified Chemical Substances	52(52)	51(50)	1(2)	0
Dust	26(22)	25(21)	1(1)	0

Management level I: Workplace environment management is appropriately implemented; maintain the current management level.  
 Management level II: There is room for improving workplace environment management; endeavor to shift to management level I.  
 Management level III: Workplace environment management is inappropriate; take immediate remedial action.

### Example of Workplace Environment Improvement

Industrial doctors and health managers regularly conduct workplace patrols and suggest upgrades for equipment and others according to the conditions in the workplace, in cooperation with onsite workers. At the Nagoya Works, the break room was remodeled and the anterooms were refurbished to designate smoking and non-smoking areas and provide more comfortable spaces.



Before improvement



After improvement

# Commitment to Process Safety and Disaster Prevention

The Mitsui Chemicals Group places its highest priority on securing safety. It is constantly involved in programs and other efforts to prevent accidents. Our ambition is to construct a safety system, based on preventative measures, that ensures zero-accidents.

## Securing Safety

In addition to improving the reliability of our facilities using a process safety and disaster prevention system, we are conducting efforts to ensure safety, including safety technology inspections, remedial measures, safety assessments, educational programs, and establishment of a dedicated organization.

### ■ Company-wide inspections and measures regarding safety technology

Expert technicians visit all plants and conduct company-wide inspections regarding safety technology with a focus on an item selected for each year. Appropriate measures based on the findings are taken. In fiscal 2004, inspections and measures concerning static electricity accidents were conducted.

### ■ Safety assessment and verification according to company rules

In fiscal 2004, we assessed and verified the safety of 385 developments of new product/production technology or newly installed or modified units of equipment in the entire company, in accordance with our Environment and Safety Evaluation Meetings Operating Procedures and Technology Evaluation Meetings Operating Procedures.

### ■ Updating educational programs for heritage of safety technology

We have begun training workplace safety engineers (one per workplace) as key persons to resolve safety problems at each workplace. To improve safety technology at our works, we are training our plant operators by sending them as contract researchers to a safety engineering university. The number of employees dispatched was two in fiscal 2004 and one in fiscal 2005.

### ■ Establishing a dedicated organization for safety engineering

To integrate safety engineers and enhance our process safety and disaster prevention, we are planning to establish a new organization as the core of safety engineering for the entire company.



Training session on alkyl aluminum combustion

## Implementing Legal Compliance Audits

As in fiscal 2003, we promoted group-wide efforts for compliance with laws and regulations as a key issue. The company-wide measures included enhancing audits and our educational programs on legal compliance.

In fiscal 2003, we established the Safety Audit Department at the head office and the Safety Audit Department at each of our works certified for safety practices according to the High-Pressure Gas Safety Law (Ichihara Works and Iwakuni-Ohtake Works) and the Osaka Works. In fiscal 2004, the Safety Audit Section was established at the Environment, Safety & Administration Departments of the Omuta Works and Nagoya Works to reorganize the auditing system at all works.

In addition to legal compliance audits by the Safety Audit Departments and by the Safety Audit Section at Environment, Safety & Administration Department, we are making a concerted, company-wide effort by the Safety Audit Department at the head office, to ensure strict compliance with laws and regulations.

### ■ Results of audits by the Safety Audit Department at the head office

Works	Audits concerning autonomous inspections for safety practices according to the High-Pressure Gas Safety Law	Audits concerning the three safety laws* and the Poisonous and Deleterious Substances Control Law
Ichihara	6 times	1 time
Nagoya	—	1 time
Osaka	5 times	2 times
Iwakuni-Ohtake	3 times	1 time
Omuta	—	1 time

\* High-Pressure Gas Safety Law, Fire Services Law, Industrial Safety and Health Law

## Plans and Drills for Local Safety and Disaster Prevention

In preparation for emergencies, the Mitsui Chemicals Group performs regular anti-disaster drills, including fire, summons of personnel, and general alarms. Disaster prevention plans are prepared annually by individual workplaces and drills are conducted as suitable for the operations of each workplace. Additionally, periodic general disaster prevention drills are planned for the entire works and conducted in the presence of the local public fire service and the self-defense fire-fighting unit. Joint disaster prevention drills with mutual assistance are conducted along with the local public fire service and with neighboring companies.



A drill for local safety and disaster prevention at Chiba Petrochemical Complex (Central Keiyo Beach Area)



A fire-fighting drill at MHM (Thailand)

## Efforts to Prevent Accidents

In fiscal 2004, the following four accidents occurred at our sites. We took immediate measures against each case. We are striving to forestall similar accidents by taking preventive measures based on what we have learned from these accidents.

- Residue ignited during treatment (Osaka Works).
- An oxygen gas strainer was damaged due to burning (Ichihara Works).
- A minor fire occurred due to a leak of hot oil (Iwakuni-Ohtake Works).
- Modifier gas leaked from the modification furnace (Iwakuni-Ohtake Works).

### Comment from Manager

The chemical industry contributes significantly to society by providing useful technologies and materials on one hand. On the other, it involves risks such as fires and explosions, as it deals with many flammable or toxic dangerous substances. It is my task to minimize these risks by implementing various measures, both physical and procedural measures, through the entire life cycle of our products, from research, manufacture, and sales to final disposal.

Recent years have brought several earthquakes to Japan, including the Tokachioki, Niigata-Chuetsu, and Fukuoka. There is increasing probability that earthquakes will occur in the Tokai and Tonankai regions, where foreshocks have been increasing. Accordingly, we have drills to practice disaster prevention under those circumstances.



**Osamu Usui**  
Environment, Safety & Quality Division

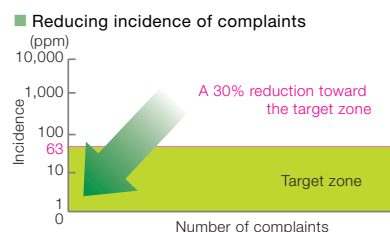
# Commitment to Quality Management

The Mitsui Chemicals Group is striving to forestall similar accidents by taking preventive measures based on what we have learned from major product liability (PL) problems that have recently occurred outside the group, and is working to strengthen quality management at all group companies. We are determined to supply high-quality products and services that earn the trust and satisfaction of customers and consumers, so that they will feel confident when using products for their intended applications.

## Efforts for Enhancing Quality Management

Our traditional approach to quality management had been aiming at reducing the number of complaints. In fiscal 2005, we introduced a new approach of incidence\* management as an indicator for quality management levels shared by all companies of our group. The quality management level for each product is assessed quantitatively to achieve further improvements in our quality management level.

\* Incidence = quantity (tons, sheets, or units) of a product for which complaints are voiced/annual production (tons, sheets, or units) of the product



## Enhancing Quality Management at Subsidiaries and Affiliates

The production lines in 35 subsidiaries or affiliates with production or logistic departments (15 in Japan, 20 overseas) were inspected to determine their performance of quality management according to use risks of their products, using a checklist for 50 items generated by Mitsui Chemicals. Quality auditing was based on the Sengen principle (workplace-oriented approach: measures are planned and executed based on the actual data and facts at workplace). It was also conducted for process management, from feedstock acceptance to product storage. Quality management levels are determined by the results of these self-inspections and quality audits. Mitsui Chemicals provides support for its subsidiaries and affiliates to enable them to maintain their own quality management levels, which are specified according to uses of their products.



Quality auditing for a subsidiary (ESCO in the US)

## ISO 9001 Certification Acquisition

All of our works have acquired ISO 9001 certification, as revised in 2000. We are working to provide products that quickly satisfy our customers' needs by implementing quality management based on the ISO 9001 management system. Specifically, our systematic approach to continual improvement is ongoing to revise and upgrade our quality management systems and oversee product quality by operating the PDCA cycle. We are also working to increase customer satisfaction, with emphasis on obtaining feedback, including complaints, from our customers.

## Responding to Complaints

There should never be quality-related complaints, from the viewpoint either of customer satisfaction or of product safety. We are working to reduce complaints as a key issue of quality management.

For example, we perform stratified analysis of complaints by product and by operating stage, and we concentrate our efforts on the products and stages which have the highest incidences of complaints. Additionally, our Complaint Management Workflow System\*, instituted in fiscal 2004, ensures quick responses to complaints.

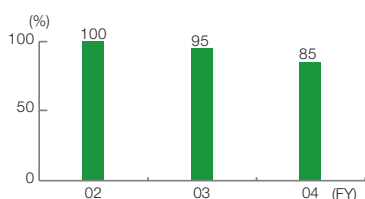
We are also conducting the following means to reduce complaints.

1. Executive audits
2. Education on prevention of PL-related accidents and quality management
3. Sharing information from complaint case reports
4. Logic tree analysis for causes of complaints
5. Strengthening guidance for production contractors&FMEA\*2 analysis for potential factors

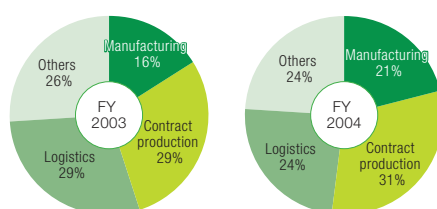
\*1 Complaint Management Workflow System: Mitsui Chemicals' database system that enables sharing information on quality-related complaints from customers in all workplaces (offices, works, and laboratories) to support identification of causes, remedial measures and reporting to customers.

\*2 FMEA: An abbreviation for Failure Mode & Effects Analysis.

■ Changes in the number of complaints per year (percent values compared to fiscal 2002)



■ Breakdown of complaints by year



### Comment from Manager

At my position, I had been troubled with the lack of indicators of quality management levels shared by quality managers at our business divisions, works, subsidiaries and affiliates while discussing quality improvement. In fiscal 2005, we introduced an incidence indicator. I hope this indicator of quality management levels will help further improve quality management activities throughout the Mitsui Chemicals Group.



**Masatoshi Kumamoto**  
Environment, Safety & Quality Division

# For Supplying Safe Products to Society — Efforts for Product Safety —

In recent years, there has been increased global concern about the safety of chemical substances. In July 2003, the United Nations recommended the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). In Europe, the New EU Chemicals Legislation REACH (Registration, Evaluation, and Authorization of Chemicals) is being discussed for adoption in 2007 or later. In Japan, the Law Concerning the Examination and Regulation of Manufacture of Chemical Substances was revised drastically. The Japanese authorities are implementing an inspection program (Japan Challenge Program) to determine the harmfulness of existing chemical substances, with collaboration between industrial and governmental sectors. Hence, chemical products will be required to show even higher levels of safety and the demands for safety assessments and information have increased to an unprecedented level. Mitsui Chemicals is actively involved in industry-wide initiatives in response to these social demands, and is conducting its own unique efforts [Table 1](#).



(From right)

## Tadashi Takahashi

Chemical Safety Research lab.,  
Mitsui Chemical Analysis & Consulting Service Inc.

## Kaori Matsue

Chemical Safety Research lab.,  
Mitsui Chemical Analysis & Consulting Service Inc.

Tadashi Takahashi has been in charge of safety assessments for 17 years since joining the company. He talks with great animation, "I'd like to support product development by evaluating the safety of products so that consumers can use them with confidence in their safety." Kaori Matsue says, "I want to make proactive efforts to ensure accurate safety assessments."

## Our Efforts for Product Safety

As described above, we keep careful track of public demands for safety from chemical accidents, and are active in the industry-wide effort to promote safety and reliability in response to the global trends. We emphasize product safety as the fundamental of RC activities involving the entire life cycle of our products, from development, manufacturing and distribution to use and final disposal. We maintain a system for evaluating the safety of our own products throughout the life cycle, and for ensuring the availability and reliability of safety information [Chart 1](#).

## Assessing the Safety of All Chemical Substances Handled in Our Business Activities

"We assess the safety of chemical substances handled in our business activities not only by legally specified safety assessments, but also by applying our own stricter rules," says Senior Researcher Tadashi Takahashi at the Chemical Safety Research Laboratory of the Safety Science Division of Mitsui Chemical Analysis and Consulting Service Inc. For example, testing takes place when a new chemical substance has been developed or when the manufacturing process or the combination of raw materials in an existing product has been changed.

There are three types of tests undertaken according to the Law Concerning the Examination and Regulation of Manufacture of Chemical Substances: (1) Influences of environmentally released chemical substances on humans and

other organisms in the food chain (persistence and biological accumulation); (2) direct influences on the human body; and (3) direct influences on animals and plants.

Mitsui Chemical Analysis and Consulting Service Inc. is a testing organization that conforms to the requirements of the Good Laboratory Practice (GLP) specified in the Law Concerning the Examination and Regulation of Manufacture of Chemical Substances. It is capable of testing the persistency and biological accumulation of chemical substances released into environments. Evaluations of direct influences on humans, animals and plants are outsourced to contract testing organizations. Human influences examined include genotoxicity and repeated ingestion toxicity. In addition to these legally required tests, we undertake tests concerning safety for workers and tests according to intended uses of products.

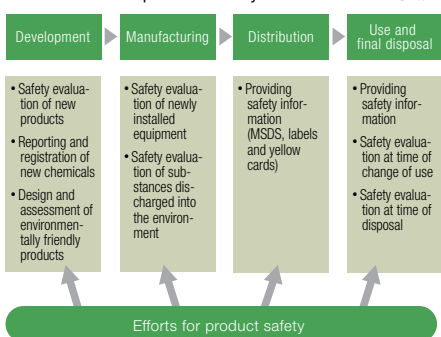
"For any testing outsourced to a contract organization, simply contracting the test does not suffice," says Senior Researcher Kaori Matsue. The processes of choosing the contract testing organization and method and procedures of assessments, and confirming the results are of paramount importance in obtaining accurate results that well reflect the physicochemical properties of the chemical substance tested, and must be performed by well-experienced personnel.

Although safety assessments lack the cachet of product development and other tasks, they are exacting work and may be described as the most important tasks of all. This is because of the complexity of the many methods used in different assessments of new chemical substances. As the guidelines require difficult tests for more and more substances, greater emphasis must be placed on the choice of methods for assessments.

Recent trends concerning chemical safety [Table 1](#)

	'00	'05	'10
Enhancement of legal regulations, both in Japan and abroad, concerning chemical safety		PRTR Law Basic Food Safety Law Law Concerning the Examination and Regulation of Manufacture of Chemical Substances as Revised REACH Japan Challenge Program	
New scientific findings concerning toxicity		Environmental hormones Child health issues	
International initiatives for development of safety evaluation methods and freer access to more reliable information		Safety inspection of high production volume (HPV) chemicals GHS classification and labeling of chemicals	
Disclosure of material safety data sheet information		Green procurement to avoid the use of harmful substances Disclosure of information on substances discharged in the environment	

Our efforts for product safety [Chart 1](#)



Rearing fish used for testing

Another difficulty resides in temporal limitations. Test results must be obtained well in advance of the launch of the product in question. As long as 1.5 years is taken solely to perform the tests required by the Law Concerning the Examination and Regulation of Manufacture of Chemical Substances.

Takahashi and Matsue talk with great animation, "I would like to support product development by evaluating the safety of products incorporating a new chemical substance so that consumers could use them with confidence of safety after their launch" (Takahashi), "I want to make proactive efforts to ensure accurate safety assessments" (Matsue).

### Confirming the Safety of Food Packages by Strict Testing

Mitsui Chemicals applies strict testing criteria to raise the safety of its products. For example, we perform elution tests to determine whether any ingredient of plastic resin, which is widely used in food packages, dissolves and affects the human body when exposed to water, oil or the like added to the container.

"We think of ourselves as the chemical company to conduct the most severe elution testing in Japan," proudly says Senior Researcher Hiroki Nakagome, at the Safety Science Division of Mitsui Chemical Analysis and Consulting Service Inc. Food manufacturers generally use resin containers to pack their products, so perform their own elution tests, but this is not usually the case for chemical companies that supply resin materials to food manufacturers.

We perform elution tests mainly in cases where food manufacturers and the like are considering adoption of a new resin material developed by Mitsui Chemicals for their packages. The resin is processed into a shape resembling the packaging container, and immersed in four kinds of liquids: water, alcohol, oil, and acetic acid. After being exposed to various conditions of temperature, time and other factors, each

liquid is applied to an analyzer to determine the amount of mass removed from the resin.

Safety ratings are based on our internal risk assessment procedures formulated in line with the US FDA guidelines for the safety of food packaging. If the amount eluted exceeds the maximum allowable level specified in the procedures, we will set forth limitations as to intended use of the resin, thickness and service temperature of the package, etc., indicating how to use it safely. If the safety criteria are not met after such limitations, sales are discontinued. In addition to development of new resin, this testing takes place in case of changes in manufacturing process or in the blend of the raw materials. About 20 tests are performed every year.

Provisions concerning safety assessments for food packages are given in the Food Sanitation Law. Food manufacturers and the like normally conduct testing based on these provisions. To ensure even higher levels of safety, Mitsui Chemicals sells resins that have been internally assessed by its sophisticated analytical technology using criteria stricter than the legal requirements, an unusual practice for a chemical company [Table 2](#). Nakagome talks about the future prospects for his work, "I want to appeal our commitment to product safety through food packages, a product familiar to the general consumer.



Concentrating the elution test solution



**Hiroki Nakagome**  
Chemical Safety Research lab.,  
Mitsui Chemical Analysis & Consulting Service Inc.

Nakagome studied environmental technology concerning water treatment etc. at university. He feels highly rewarded with his duties concerning the environment and safety, themes in which he has been interested since those days.

### Efforts for Developing National Standards of Categorized Food Devices and Packages of LACEA™

As polylactic acid (LACEA™) is expected to come into more common use in the future, national standards of categorized food packages are being developed. Prior to establishing such standards, risk assessments were conducted to evaluate the effects of LACEA™ on foods and health by the Food Safety Commission of Japan's Cabinet Office. We provided information necessary for the evaluations in cooperation with Nature Works in United States, one of several contract partners.

Currently, Japan's Ministry of Health, Labor and Welfare is preparing to establish standards for polylactic acid-based materials based on the assessment results from the Food Safety Commission. We will continue to provide necessary information to help the establishment of the standards.

■ New product safety evaluation system in ACCEL 21\*1 [Table 2](#)

Stage	Development process	RC actions
I	Setting forth product concept	Collecting and reviewing safety information
II	Adding features to the concept Market potential evaluation	Safety evaluation based on published information
III	Product development and pilot market development	Risk assessment conducted (Hazard assessment and exposure assessment) ↓ Feasibility determination*2 → Cancellation of development
IV	Full-scale market development	Implementation of safety measures
V	Commercialization	Launch

\*1 ACCEL 21: A new product safety evaluation system developed internally

\*2 Feasibility determination: If there is much concern about risks, feasibility is discussed at product safety meetings.



**Izumi Mita**  
Agrochemicals Group,  
Functional Chemicals Laboratory

"I want to continue to enhance our safety assessments and develop responsible products," says Izumi.

### Assessing the Safety of Agrochemicals from Various Viewpoints

"Our goal is to offer products of high performance and high safety," affirms Senior Researcher Izumi Mita at the Agrochemicals Group of the Functional Chemicals Laboratory. Agricultural chemicals often enter the human body via crops they are used on; farmers also come into direct contact with them. We keep this in mind as we conduct rigorous assessments of their safety.

Our approach focuses on six aspects: genotoxicity items such as mutagenicity, acute and chronic toxicities with chemical uptake in the body, carcinogenicity, influence on offspring, effects of skin contact and eye entry, and biological behavior in the animal and plant bodies.

First, genotoxicity is determined at the developmental phase for a new chemical substance to be used as a raw material for an agricultural chemical. After performance is confirmed at the commercialization phase, toxicity profiles with ingestion are assessed. Specifically, the test material is given to mice or rats in food mixture for one to three months. The animals are extensively examined for external changes such as body weight, and for internal changes, to the histological level, such as lesions in internal

organs. Doses that cause any abnormality are determined, and the no-observed-adverse-effect level (NOAEL) is calculated. Effects on aquatic life are also explored. Following the internal safety assessments, genotoxicity and oral toxicities are again examined, but at this phase the testing is outsourced to a contract testing organization, which also undertakes tests for carcinogenicity (cancer development), teratogenicity (malformations in offspring), and infertility (disturbance of normal reproduction in offspring) with ingestion throughout the life span of the test animal.

In addition to these tests, which are performed as required by national guidelines, we conduct non-mandatory tests as necessary to confirm safety from multiple viewpoints. After these safety assessments, newly developed chemical substances are used alone, or in combination, to develop a new agricultural chemical, which is subjected to internal safety assessments and then assessed by external organizations. About 10 years is taken from these steps of safety assessments to national approval of the new product [Table 3](#).

In summary, we make rigorous safety assessments throughout the course of developing an agricultural chemical, from raw material chemical substances to finished product.

### Efforts for Protection of Welfare of Laboratory Animals during Safety Assessments

We make proactive efforts for welfare of laboratory animals we use in our experiments. We strive to appropriately handle the animals during internal experimentation, and also adopt alternative approaches to minimize the number of animals used. For animals which are kept for observation over long periods, we provide playthings and do other things to provide as humane an environment as possible.

We request contract testing organizations to comply with the "Standards Relating to the Care and Management of Laboratory Animals" and "Guidelines for Laboratory Animals," which are based on the Law for the Humane Treatment and Management of Animals.



Microscopic examination  
for histological abnormalities

■ Flow of research into safety of agricultural chemicals

Table 3

Developmental stage		Research			Development								Launch	
Period (years)		-1 – 1	2	3	4	5	6	7	8	9	10	11	12	
Safety testing	Internal initial toxicity testing	Mutagenicity →		Subacute toxicity →			Genotoxicity, irritancy, and acute toxicity							
	Acute oral toxicity →													
	Internal preliminary testing						Subacute toxicity →							
Outsourced testing in preparation for registration							Chronic toxicity, carcinogenicity, and reproductive toxicity →							
							Neurotoxicity and pharmacology →							
							Acute toxicity and irritancy of pharmaceutical preparations →							
Environmental testing	Internal initial toxicity testing	Acute toxicity (fish, water flea, algae) →					Environmental toxicity (fish, water flea, algae, birds) →							
	Outsourced testing in preparation for registration													
Application for registration													Application for registration and sales	



#### Masachika Yoshinari

Chemical Safety Research lab.,  
Mitsui Chemical Analysis & Consulting Service Inc.

Yoshinari says, "I want to promote human resource development to enhance our safety information system."

at all times, from any group company, via our intra-net system.

Our MSDS's are based on the results of the latest safety tests in Japan, overseas, and within Mitsui Chemicals. We collect information from a broad range of highly reliable sources, including research organizations of the United Nations and a number of countries, and various databases. For selected data, texts are given on MSDS's in a way to allow all operators to easily understand the facts.

At his current position, Yoshinari is working in charge of preparation of MSDS's with about 25 years of experience in toxicological assessments of agricultural chemicals. The duty of integrating data on hazards and harmfulness and passing essential information to non-expert operators in a comprehensible way cannot be fulfilled without such a long career in safety assessments.



Material safety data sheet [Photo 1](#)



Warning label [Photo 2](#)

### Promoting Safe Use of Products by Providing Safety Information

"Providing accurate information is critical to ensuring the safe use of our products by customers," says Senior Researcher Masachika Yoshinari at the Safety Science Division of Mitsui Chemical Analysis and Consulting Service Inc. Mitsui Chemicals is striving to prevent accidents on those involved in direct handling of chemical substances. To this end, we prepare material safety data sheets (MSDS's) for all of our products, and disclose safety information on their hazards and harmfulness to our customers [Photo 1, 2](#). As a dedicated division in our group, the Safety Science Division performs all the duties of investigating safety information on our products and substances we handle, and of generating MSDS's. We maintain an MSDS database that allows all employees to access to current versions of MSDS's, no matter where they are used,

### Participating in the Japan Challenge Program

In Japan, the Program for Gathering and Disseminating Safety Information on Existing Chemical Substances (Japan Challenge Program), aiming to accelerate the collection of safety information on existing chemical substances and disseminate it widely to the public with collaboration between industrial and governmental sectors, was instituted in fiscal 2005. The program is intended to gather and disseminate safety information preferentially on 166 substances not covered in any international initiatives (OECD, HPV, US Challenge, etc.), out of 665 items that are manufactured or imported in amounts of not less than 1,000 tons per year in Japan, by Japan-based private companies wanting to voluntarily collect such information as sponsors of the program, by fiscal 2008. We are positively involved in this program, and will finish compiling necessary data by 2008.

### Enhancing Product Safety Assessment System

The issue of product safety is expected to expand greatly in scope in the coming years, with widening developments of functional products, and with collection of more safety data on existing products. As there will be greater demands to expand internal assessments for product safety, we will develop the technical expertise of our human resources and upgrade our company-wide system for safety assessments, both systematically and functionally. The new system will integrate all the functions concerning product safety described above. By doing so, we make our commitment more readily accessible to outside sectors, and significantly help cultivate a more robust competitive lead in terms of product safety.

### Enhancing Safety Assessment and Management System

"We want to change our approach to commitment to enhancing safety from "guard" to "offense," says Manager Koji Kitajima at the Environment, Safety & Quality Division. In fact, commitment to enhancing safety is becoming a factor in customers' choice of products; we have recently been increasingly often requested to teach our specific approaches to safety assessments from the viewpoint of assuring product safety as a material manufacturer. Our efforts have been highly appreciated. Mitsui Chemicals has also begun strengthening its operation and management system concerning product safety assessments, since "We must improve our efforts for product safety fitting to the scale of our business activities and the great expectation from society" (Kitajima).

Specifically, we will assemble an expert team capable of responding to the rapidly growing needs for safety assessments. We will invest in testing facilities and in training. Additionally, we are determined to upgrade and streamline the existing organization for safety assessments and clarify its duties concerning safety assessments and safety information management. Kitajima confidently says, "I want to connect safety enhancement efforts to increase the value of our products."



#### Koji Kitajima

Environment, Safety & Quality Division

Striving to enhance the safety assessment system, Kitajima says, "The safety assessment technology that has long been developed by Mitsui Chemicals is a great heritage not found in other companies. I want to grow it into a system that benefits the entire company."

# Commitment to Logistics Safety and Quality

The Mitsui Chemicals Group is promoting upgrading of its responsible care (RC) management system with top priority to safety in logistics. We have separated the Logistics Division of Mitsui Chemicals off, into MITSUI CHEMICALS LOGISTICS, INC. A RC & Logistics Technology Department was established in the new subsidiary to promote logistics-related RC activities in the Mitsui Chemicals Group.

## Major Efforts for Logistics Safety and Quality

In fiscal 2004, we enhanced our efforts to forestall PL-related accidents. Specifically, we continued and upgraded quality management education at Mitsui Chemicals and our logistic contractors. We also implemented measures against erroneous shipment/delivery and entry of foreign matter into our products.

We also enhanced our activities toward the Zero-Accident goal, including prevention of accidents due to human error (e.g., safety management for winged vehicles for transportation), reviews of workplace operating rules/manuals, and enhancement of workplace patrols.

## Logistics Safety Management System and Logistics Safety Education

The Mitsui Chemicals Group has formulated rules to ensure the safe transportation of products manufactured at their works: Rules for Environmental and Safety Control in Logistics, Logistics Division's Guide to MSDS Distribution, Guide to Yellow Card Management, and Guide to Auditing Logistics Contractors. We also conduct audits on logistics contractors in cooperation with Mitsui Chemicals Logistics, Inc., to enhance our safety and quality management, and provide guidance/education programs to raise awareness among their employees. In fiscal 2004, 138 logistics contractors were audited. Our works hold meetings of the MCI Contractors Safety Collaboration Committee and the Disaster Prevention Council to maintain awareness of logistics safety among logistics contractors and to prevent accidents and other unwanted events.

## Safety Measures Using MSDS and Yellow Card

Since we handle many hazardous chemical substances, poisons and deleterious substances, we exert great caution during product transportation.

We provide material safety data sheets (MSDS's) for logistics contractors for safety during product transportation, for their understanding of product hazards and harmfulness. Additionally, we require their drivers to carry a Yellow Card bearing information on measures to take and facts to notify in the event of an accident.



Yellow Card

## Logistics Quality Management by ISO 9001

Mitsui Chemicals Logistics, Inc. acquired ISO 9001 (version 2000) certification in June 2001 as a stratagem to force improvement in its logistics quality management. In fiscal 2004, the company underwent the first renewal examination and renewed the certification.

We are striving to provide safe, reliable, and quick logistics services using the best approach for each customer, to increase their satisfaction.



ISO 9001 certificate

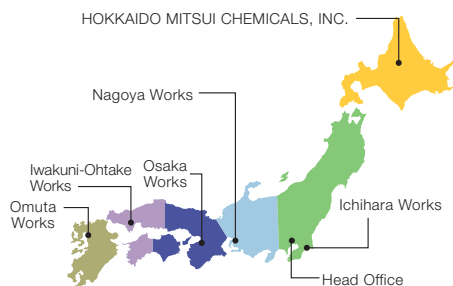
## Logistics Safety System MENET

The Mitsui Chemicals Group has established the Mitsui Chemicals Group Logistics Emergency Network (MENET), a safety system for emergency actions to minimize damage in the event of an accident while carrying a product.

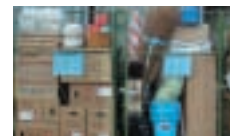
The system is operated by MITSUI CHEMICALS LOGISTICS, INC. In this system, Japan is divided into six areas. Upon hearing of an accident, qualified employees are immediately dispatched from the nearest works to take action.

To enable speedy action, Mitsui Chemicals Logistics conducted MENET drills once for the entire company and once for each branch in fiscal 2004. Anti-disaster equipment and materials are always available at support base warehouses to enable speedy action.

### ● MENET support bases



MENET drill at each branch

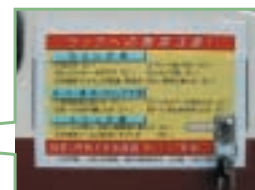


Anti-disaster equipment and materials

## Activities for Zero-Accident Goal

In fiscal 2004, accidents occurred in which plant racks were damaged by vehicles driven with the wings (vertically operating doors on the sides) or small crane up. Based on what we had learned from these accidents, winged vehicles or crane were obliged to bear a caution plate.

Before unloading the cargo, the driver hangs the plate, along with the ignition key, on the driver's sheet door side. After completion of the operation, the driver reads the precautions while taking the key so as to confirm that the wings or crane is at the down-position.



Caution plate

## Comment from Manager

We are working to enhance activities for the Zero-Accident goal as a key issue in the annual plan, and supporting the efforts at individual departments by audits. We will improve logistics quality by promoting compliance with ISO 9001.



**Kei Yokota**  
RC & Logistics  
Technology Department, MITSUI  
CHEMICALS LOGISTICS, INC.

# Products, Technologies and Businesses That Contribute to Society

The Mitsui Chemicals Group is committed to achieve “Dream-Inspiring Innovation” by efficiently utilizing chemical resources to promote the development and use of products that contribute to society.

## List of businesses, products and technologies that contribute to society

Product or technology	Features	Material	Competent division/company
<b>Resource conservation</b>			
Nonwoven fabric	Medical and paper diaper material with reduced thickness for resource conservation	Polypropylene	Functional Fabricated Products Division
Smart Shield Film	A transparent film that insulates electromagnetic waves and heat rays, preventing jamming and contributing to energy conservation when applied over windows in houses.	—	Electronics Materials Division
WHITE REFSTAR <sup>1</sup> /ENHANSTAR <sup>1</sup>	Liquid crystal backlight reflecting sheets of high reflectivity and power-saving quality	Polypropylene	Information Materials Division
ADMER <sup>1</sup>	Complexing of polyolefin materials of different performance profiles to create lighter-weight high-performance material	Adhesive polyolefin	Elastomers Division
TAFMER <sup>1</sup>	Additive mixed in polyolefin and other resins to improve plastic performance	α-Olefin copolymer	Elastomers Division
OLESTER UD <sup>1</sup>	Solvent-free coating	Urethane modified resin	Specialty Resins Division
Chemical recycling process using supercritical steam	Technology for recovering raw material from urethane raw material (TDI) waste using supercritical steam	—	mitsui TAKEDA CHEMICALS, INC.
Automotive diesel exhaust scrubbing technology (project entrusted by NEDO)	To the automotive diesel exhaust gas processor is charged with urea to reduce NOx in the exhaust gas and improve fuel efficiency.	Urea	Industrial Chemicals Division
TOUGHTRACE <sup>1</sup> (cleaner for molding machines)	Cleaner for plastic processing and molding machines that generates minimal waste volume	—	Styrenics Division
HI-ZEX <sup>1</sup> for thin-wall bottles	Bottles 15% lighter than conventional products while retaining sufficient rigidity and strength (resource conservation)	High-density polyethylene	PRIME POLYMER CO., LTD.
EVOLVE <sup>1</sup> for packaging materials	Packaging material 20 to 30% thinner than conventional products while retaining sufficient strength (resource conservation)	Vapor-phase process low-density polyethylene	PRIME POLYMER CO., LTD.
ULTZEX <sup>1</sup> for soft bottles	Containers 15% lighter than conventional products while retaining sufficient rigidity and strength (resource conservation)	Solution process low-density polyethylene	PRIME POLYMER CO., LTD.
Polypropylene (PP) mixed with wood powder, bamboo, cornstarch, etc.	Using natural materials such as building material PP mixed with wood powder and paper substitute PP mixed with bamboo, reduces fossil resource consumption	Polypropylene	PRIME POLYMER CO., LTD.
Powder molding technology (project contracted by NEDO)	Energy consumption in the manufacturing process can be reduced by about one-third by molding polypropylene resin directly from powder without the step of granulation/pelletizing (developed by SPM Simple Plastic Manufacturing).	Polypropylene	Planning & Coordination Division, Petrochemicals Business Group
High-speed heat cycle injection molding technology	A technology offering a better surface finish on molded products than with the conventional molding method; this new technology obviates the coating process or reduces the frequency of coating during surface finishing.	—	Planning & Coordination Division, Petrochemicals Business Group
SOLAREVA <sup>1</sup>	Highly durable plastic sheets for sealing the entire substrate to protect solar battery	Ethylene-vinyl acetate copolymer resin sheets	mitsui CHEMICALS FABRO, INC.
<b>Promotion of recycling</b>			
ALMASTER	Environmentally friendly toner binder resin based on regenerated PET resin	Polyester resin	Information Materials Division
MILASTOMER <sup>1</sup>	Easily recyclable automobile interior surface material	Thermoplastic olefinic elastomer	Elastomers Division
PET recycling system	Material recycled technology for waste PET resin	PET	PET Resin Division
Promotion of polypropylene recycling	Supply of formulations of optimum blending ratio for recycled/new products and corresponding items to customers to promote recycling of polypropylene bumpers	Polypropylene	PRIME POLYMER CO., LTD.
Polypropylene material for concrete panels	Polypropylene shuttering for concrete panels is tougher than wood shuttering, so its use conserves wood resources, and it can be re-used many times.	Polypropylene	PRIME POLYMER CO., LTD.
Polyolefinic material for PET bottle shrink labels	Labels enabling easy recycling of PET bottles (refer to page 42)	Polypropylene/Apel etc.	PRIME POLYMER CO., LTD.
WARM business	Recovering and recycling of difficult-to-recycle waste acids from factories	—	SHIMONOSEKI MITSUI CHEMICALS, INC.
NOBOROCK <sup>3</sup>	Agent that removes fluorine from factory wastewater. Removed fluorine is recovered and recycled.	—	SHIMONOSEKI MITSUI CHEMICALS, INC.
EP piping	Water conduits for drainable paving made of recycled PET	Recycled PET	mitsui CHEMICAL INDUSTRIAL PRODUCTS, LTD.
<b>Replacement with products with reduced environmental burden</b>			
SWP <sup>1</sup>	Asbestos-free cement slates and coatings (refer to page 43)	Synthetic pulp of polyolefin	Functional Fabricated Products Division
TECHNOROT <sup>1</sup>	Metal-free shape-retaining fibrous/sheet material	Polyethylene	Functional Fabricated Products Division
MEGAX <sup>1</sup>	Material used in dry liquid crystal etching process with less environmental burden than the conventional process for liquid crystal production	Hydrogen iodide	Electronics Materials Division
BN300 package substrate	IC substrate and printed wiring board that can be used with lead-free solder	—	Electronics Materials Division
BN300GF package substrate	IC substrate and printed wiring board that can be used with chlorine-free lead solder	—	Electronics Materials Division
FILTOP <sup>1</sup> /FILFINE <sup>1</sup>	Plasma display optical filter that blocks harmful electromagnetic waves	—	Information Materials Division
Starkle <sup>1</sup>	Insecticide of very low toxicity for paddy rice culture and horticulture (refer to page 42)	Furanicotinyl-series insecticide	Agrochemicals Division
ARLEN <sup>1</sup>	Heat-resistant and water-resistant resin that can be used with lead-free solder	Denatured polyamide 6T (semi-aromatic polyamide)	Performance Polymers Division
New Hofmann PAM	Paper-reinforcing agent that reduces polluted wastewater discharged from production of cardboard	Polyacrylamide	Specialty Resins Division
CHEMPEARL <sup>1</sup>	Anticorrosive coatings that contain no harmful hexavalent chromium (an agent harmful to the human body), solvent free automobile coatings	Olefin resin	Specialty Resins Division
ALMATEX <sup>1</sup> powder	Solvent-free automobile coatings	Acrylic resin	Specialty Resins Division
FA STRUCTBOND	Asbestos-free building and industrial adhesive	Epoxy resin	Specialty Resins Division
TAKEMELT <sup>1</sup>	Solvent-free reaction type urethane hot-melt adhesive	Polyurethane	mitsui TAKEDA CHEMICALS, INC.
Takelac W <sup>1</sup>	Paint resin containing no organic solvents that can produce oxidants	Polyurethane resin	mitsui TAKEDA CHEMICALS, INC.
Polypropylene material for automobile bumpers	Polypropylene material enabling shorter molding time than with conventional products	Polypropylene	PRIME POLYMER CO., LTD.
Polypropylene material for foldable containers	Plastic material for foldable containers used in logistics of daily supplies, that permits repeated use with high impact resistance	Polypropylene	PRIME POLYMER CO., LTD.
LACEA <sup>1</sup>	Plant-derived biodegradable plastic, used in tableware and outer walls of the Japanese Government's Pavilion for The 2005 World Exposition, Aichi (refer to page 43).	Polylactic acid	Polymer Business Development Division
<b>Environmental contamination prevention and restoration</b>			
Decomposing catalyst to detoxify exhaust gases	Exhaust gas treatment agent that detoxifies hazardous gases discharged during semiconductor manufacturing	—	Functional Chemicals & Engineered Materials Business Group
Wet oxidation equipment	Technology to efficiently decompose sulfur-containing wastewater from various organic manufacturing plants	—	Petrochemical Feedstocks Division

<sup>1</sup>: Trademark of MITSUI CHEMICALS <sup>2</sup>: Trademark of MITSUI CHEMICALS FABRO <sup>3</sup>: Trademark of SHIMONOSEKI MITSUI CHEMICALS <sup>4</sup>: Trademark of MITSUI TAKEDA CHEMICALS

# Products, Technologies and Businesses That Contribute to Society

Of the products listed in the previous page, those with low environmental burdens that are commonly used in our daily life are described in more detail below.

## Supporting PET Bottle Recycling - Resin for Shrink Labels -

Used PET bottles are recycled into feedstock materials for apparel and other plastic products. In Japan, PET bottle recycling has been well established to the extent of a recovery rate of 61% in fiscal 2003. The first treatment in the recycling process is to manually remove any remaining shrink labels from bottles. Subsequently, the bottles are milled and placed into water. PET resin (transparent bottle body) sinks and polyolefin resin (cap material) floats, allowing them to be sorted and recycled separately [Photo 1](#).

Labels always pose a difficult problem in PET bottle recycling. Usually, the labels are made from PET resin or polystyrene resin, which shrink upon exposure to heat, because they must be just fit to the bottle shape. However, these resins sink in water and cannot be separated from the PET resin that constitutes the bottle body.

Hence, we developed labels of polyolefin resin, a plastic material in common use in bottle caps and others. We have succeeded in conferring the resin with thermally shrinking ability by blending the appropriate ingredients. Labels made from this resin enable PET bottle sorting by the conventional method, without removing the labels, thus easing PET bottle recycling.



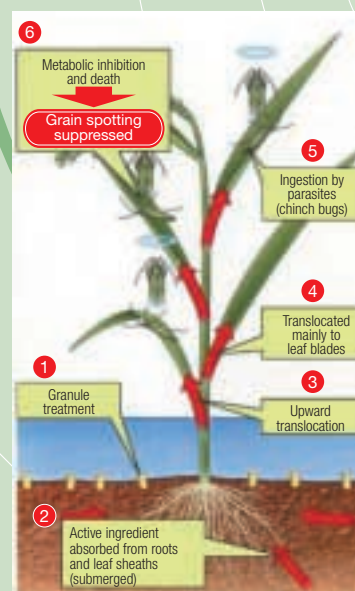
Label of polyolefin resin (above)  
Sinking PET resin and floating polyolefin resin in water (upper right) [Photo 1](#)

## Developing an Environmentally Friendly Method of Insect Control Based on Unique Features of An Insecticidal Ingredient - Starkle™ -

We launched the insecticide Starkle™ in 2002. Its unique features enable farmers to prevent insect damage with reduced environmental load.

For example, rice grain spotting damage can be minimized by simply applying Starkle™ granules over the water surface in paddy fields to prevent bugs from adhering to rice plants because its active ingredient is distributed to the entire rice plant. This is a method of application based on the high penetration/translocation profile of Starkle™. Because there is almost no concern about this agent scattering into surrounding areas, compared to conventional methods based on direct application to rice plants, Starkle™ granules have been very well received in rice-growing zones, especially by farmers in the vicinity of residential areas, and has spread earlier than expected.

Starkle™ is also highly praised in foreign countries for its safety. For example, the US Environment Protection Agency (EPA) officially approved it as an “organophosphate alternative” and “agrochemical with reduced environmental load and reduced health risk”; we acquired registration in the United States in September 2004. We will continue to develop new products based on the unique properties of Starkle™ to contribute to environmental load reductions both domestically and overseas.



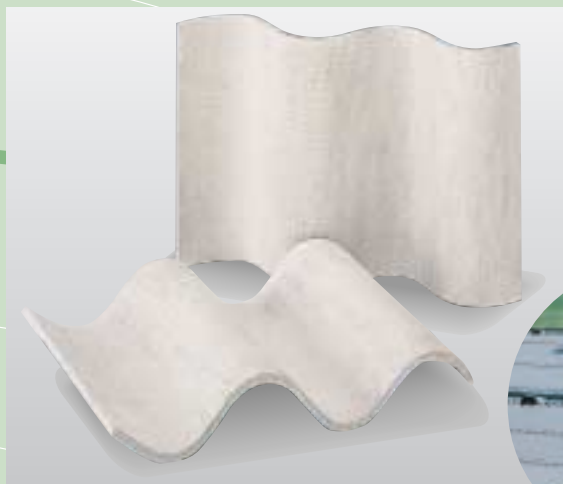
Starkle™ (upper left) and mechanism of suppression of rice grain spotting (above)

### Comment from Manager

In addition to application on paddy rice, Starkle™ granules permit several other usages, for example, on vegetable seedlings and injection of granules in aqueous solution into soil. These methods offer the advantage of environmental load reduction and are an answer to farmers' need to apply insecticides on demand; only after the occurrence of insect pests. We will continue to develop new formulations and application methods which exploit the versatility of Starkle™.



**Fumiaki Koizumi**  
Planning & New Business  
Development Department,  
Agrochemicals Division



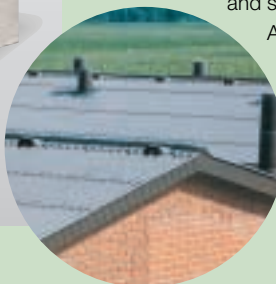
Cement slates incorporating SWP™

### Asbestos Substitute Building Material - SWP™ -

With its high strength and fine fibrous structure, asbestos has an extremely large surface area relative to its weight. It has been widely used as a fibrous component of building materials such as cement slates, but its use has recently been subject to strict control because of its harmful properties, especially its carcinogenicity.

Our synthetic pulp, SWP™, is now used as a substitute for asbestos. SWP™ is a cotton-like polyolefin fiber material produced exclusively by Mitsui Chemicals, offering moldability and strength comparable to those of asbestos when blended with cement.

Additionally, SWP™ can be used safely because it is manufactured from polyolefin, a non-destructive environmentally friendly plastic material that has a long use history. In addition to cement slates, SWP™ has already found other applications, including adhesives and anti-sagging agents for coatings, thus contributing to society with regard to both convenience and environmental conservation.



Pieces of tableware made of LACEA™ used in The 2005 World Exposition, Aichi, Japan

### Bio-based Polymer - LACEA™ -

LACEA™ is a bio-based polymer prepared from polylactic acid, which is produced by corns and other cereals. After its use, incinerating LACEA™ does not increase the amount of atmospheric carbon dioxide, because the carbon combusted is derived from atmospheric carbon dioxide fixed by plants through the biological process of photosynthesis. Additionally, fossil resources can be conserved as solar energy is used to produce the starting material polylactic acid.

LACEA™ is characterized by high transparency and resistance to deformation and is in practical use in packages such as window envelopes, food trays, and packaging bags. In June 2004, the voluntary standards for polylactic acid materials that can be used for food packages were approved at an executive board meeting of the Japan Hygienic Olefin and Styrene Plastics Association, in response to our filing made jointly with Cargill Dow LLC (now Nature Works). We are promoting the expansion of its applications in that field. In the 2005 World Exposition, Aichi, Japan, tableware made of LACEA™ was used in restaurants to raise public awareness of the exposition, which focused on the environment.

Authorities are now investigating "bio-based content," defined as the percentage of the components of plastics or other products that are derived from bio-based materials. It is regarded as a standard for evaluating the reduction of the environmental burden of the product. By alloying LACEA™ and fossil-based materials, the properties of materials can be "tuned" to obtain the desirable combinations of properties while still reducing the environmental load. We will expand the applications of LACEA™ with upgraded materials.

### VOC-free Coating - Takelac W -

Buildings and vehicles need to be coated to maintain their good appearance and prevent surface deterioration. Traditionally, coatings rich in organic solvents, such as toluene and xylene, have been commonly used because they dry quickly and have a beautiful surface finish.

It should be noted, however, that these organic solvents are classified as volatile organic compounds (VOCs). VOCs can produce photochemical oxidants upon chemical reactions with nitrogen oxides in the air under solar rays, so their emissions are controlled by the Air Pollution Prevention Law as revised in May 2004.

Against this background, coating manufacturers are subject to customers' demands for VOC-free coatings that perform as conventional coatings do. Mitsui Takeda Chemicals, a supplier of raw material resins for coating manufacturers, has been working to eliminate VOCs from our raw material polyurethane resin to develop an aqueous polyurethane resin.

We encountered many technical difficulties in conferring performance comparable to that of conventional solvent-based polyurethane resin to aqueous polyurethane resin. We cleared each hurdle one by one, and succeeded in developing Takelac W, which fulfills the performance demands from many customers. In addition to reduced environmental load, coatings incorporating this aqueous resin pose no risk of igniting and aiding the spread of a building fire. We will continue efforts to facilitate the spread of VOC-free coatings in a broad range of areas.

# Considerations for Employees

In line with promoting the happiness and fulfillment of employees, as advocated in our corporate vision statement, Mitsui Chemicals aims at a human resources system that allows each employee to feel motivated to live and work.

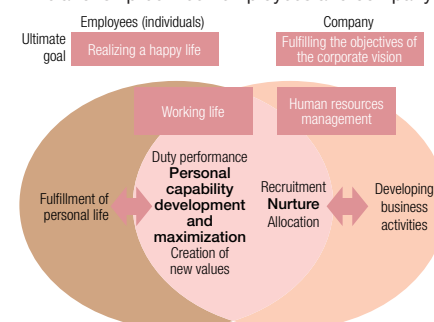
## Concept of Fostering Human Resources

Aspiring to be a Strong and Excellent Mitsui Chemicals Group with a strong competitive position in the global market, we provide an ideal working environment for “employees who continue to develop individual capabilities at their own wishes, through dialogues with others, with the aim of realizing the happiness and fulfillment of employees.” This is quoted from our basic policy on human resource development. We have based our unique educational system on this concept, where employees set forth their own goals, freely choose necessary programs from among offered ones, and independently strengthen their skills. We provide maximum possible support for employees who have high aspirations to deepen their expertise and acquire knowledge outside their areas.

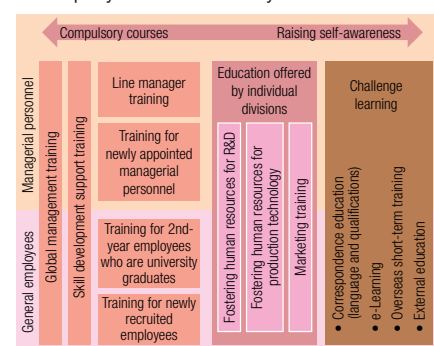
**Mitsui Chemicals emphasizes not only our “corporate vision” but also “happy life” of each employee.**

- 1 The company provides clear guidelines for the behavior expected of employees as an integral part of its corporate vision, and sponsors a broad range of necessary educational programs for its employees.
- 2 The employees develop individual capabilities at their own wishes, maximize the capabilities in the company, and realize their potential.

## Relationship between employees and company



## Company-wide education system



## Education and Training Programs

In addition to compulsory hierarchical courses designed to accommodate individual capabilities, we offer a variety of internal and external courses (optional). A large number of subjects, including e-learning programs, are offered to each individual. They are allowed to freely choose among these and plan individual programs to realize their personal potential.

## Training for Newly Recruited Employees

The objective of this program is to provide newly recruited employees with an opportunity for the paradigm shift from “student=individual person” to “employee=producer and individual person” and to allow them to independently develop the knowledge and skills that are necessary in common among all job categories. Additionally, a factory training program is available to provide an opportunity for feeling the actual job site as the place of “creation” or the starting point for manufacturers.

## Internship System

We offer internships to domestic and overseas students to familiarize them with chemistry on an actual job site where products are created in the chemical industry. We will continue to speak up for the significance of chemical technology, the utility of chemical products, and “Dream-Inspiring Innovation” by raising public awareness of the wonders and the fascination of chemistry.



Fiscal 2004 internship students

## Placing Importance on our Employees' Diverse Value Systems

### Supporting Employees to for “Work and Life Balance”

In recent years, there have been increasing trends for the birth rate to fall, the general population to age, and to nuclear families. Against this background, we have introduced programs to help employees reconcile the demands of jobs and home activities, regardless of gender, and allow them to enjoy the dignity of work throughout their life span. Our programs include a family care leave system and a childcare/family care funding system.\*

\* Diverse working styles offered in consideration of the circumstances of each employee

### Providing Workplace Environment Where Employees Can Work with Confidence

We have established a mutual aid system and an emergency support system in preparation for cases that are beyond the capacity of the public welfare services. These systems allow employees to respect their own senses of value, and to design and implement their life plans at their own wishes. Enhanced mutual aid programs provide a workplace environment where employees can work with confidence.

### Promoting Employment of the Handicapped

Mitsui Chemicals has been striving to increase the employment of handicapped people. The legally required employment ratio was cleared in fiscal 2004. We will continue to promote their employment while making efforts for improving the workplace environment where they can maximize the capabilities and work safely in the company.

## Support Programs for Childcare/Family Care Leaves

Considerations concerning holidays and care leaves	Considerations concerning working hour	Considerations concerning income
Care holidays	Shorter work hours for those accompanying infants to nurseries	<ul style="list-style-type: none"> <li>• Childcare support funding</li> <li>• Family care support funding</li> </ul>
Special holidays	Shorter work hours for caregiving	
Childcare leaves	Limitation of overtime work (childcare and family care)	
Family care leaves	Exemption from midnight work (childcare and family care)	

## Employment rate for the physically handicapped

FY 2002	1.57%
FY 2003	1.76%
FY 2004	1.86%

## Promoting Gender Equality

In addition to improving workplace culture (awareness) and supporting personal capability development and reforming the workplace environment, we are proactive in providing opportunities for raising awareness among female employees, and expanding their appointment to managerial positions. Our divisions regularly examine their ratios of female managerial personnel.

### ■ Trends in the Number of Female Employees at Managerial Posts

FY 2003	40
FY 2004	49
FY 2005	64

## Comments from Managers

At the Human Resources & Employee Relations Division, we are working to ensure recruitment and human resources development for sustainable growth and to enhance our organization and culture for sustainable growth.

This division will provide programs to help our employees develop their careers and support them, with emphasis not only on our corporate vision but also on a happy life for each employee.



**Hironori Tomoto** (left) and **Setsuko Takahashi** (right)  
Human Resources & Employee Relations Division

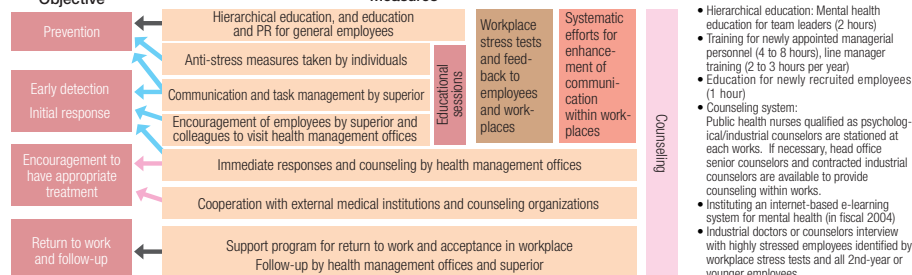
## Health Management

We are working to prevent damage to our employees' health. We provide regular medical check-ups and health counseling by industrial doctors and qualified health experts; we also offer guidance and relocations based on the results of the check-ups. We are striving to improve our employees' health as well as to prevent damage to their health by offering various voluntary measures across the company. Our efforts have paid off, as the risk of lifestyle-related diseases among our employees has tended downward. In fiscal 2004, we received the Prime Minister's Award in the Commendations on Excellent Health Promotion Efforts. Lost-time injuries associated with mental diseases have tended to increase gradually since fiscal 2000; we have taken various measures including mental health education and establishment of a counseling system and a support system for people returning to the workplace. Additionally, in fiscal 2004, we implemented company-wide internet-based training (e-learning) for employees based on cognition behavior therapy as part of the program to encourage them to self-check for stress and to raise their tolerance of stress. In fiscal 2005, we will institute a new program for employees at managerial positions as a supplement to our system for mass training concerning mental health and young employees' self-expression (assertion).

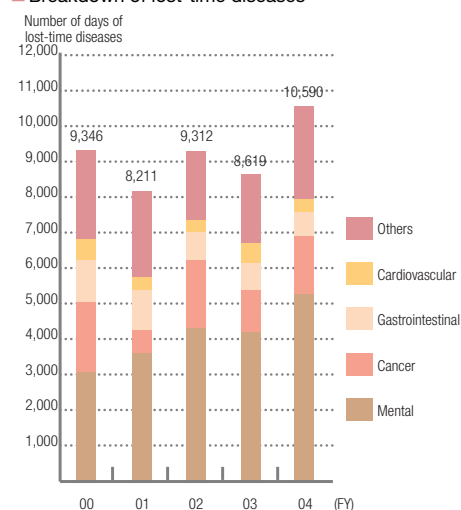
## Workplace Stress Tests

In fiscal 2003, we introduced the Simplified Occupational Stress Questionnaire developed by Japan's Ministry of Health, Labor and Welfare. Since then, we have been striving to raise the awareness of stress among employees and to reduce stress by company-wide workplace stress tests using the questionnaire. After completing the test, employees are informed about the results, and highly stressed employees are encouraged to apply for counseling. Feedback of the results for workplaces is also provided. Managers of highly stressed workplaces are given descriptions of the characteristics of their workplaces and a list of recommended countermeasures. As part of our program for strengthening the production site capabilities, the Communication Enhancement Plan has been implemented as appropriate for the conditions of the workplace, in which all employees are involved to plan and execute specific activities.

### ■ Overview of the mental health promotion plan



### ■ Breakdown of lost-time diseases



## Examples of Health-building Activities

Under the lead of health promotion committees and the like at all of our business sites, we are conducting a variety of health promotion activities, including walking events, relay road race, athletic meets, the "Long Program" (a health promotion program to encourage employees to continue good health habits), inter-workplace sport competitions, fitness classes, and dietary habit improvement programs.

At the Omuta Works, the "Health Festival" is held every year. About 900 employees or their families enjoy games such as tugs of war, beanbag throws and children's obstacle races. Other events include baseball pitching games, "Go-Go" soccer and putting golf. These activities enhance communication in the entire site and refresh the spirits and body of employees and their families.



"Health Festival" at Mitsui Chemicals Omuta Works

## Comment from Manager

Our philosophy in implementing our health measures is that employees' health is a direct support for corporate soundness. We are making steady, continual approaches, from both mental and physical viewpoints, to coping with physical decline due to aging of employees and mental health issues. With regard to risks to our employees' health (refer to page 33), we are ensuring



legal compliance and planning to clear the numerical targets specified in our management system by various means, including workplace patrols. In fiscal 2005 and beyond, we will investigate further measures to implement occupational health measures on a global scale.

### Seitaro Dohi

Manager, Health Management Office  
Manager, Health Care Section,  
Human Resources & Employee Relations Division

# Financial Performance

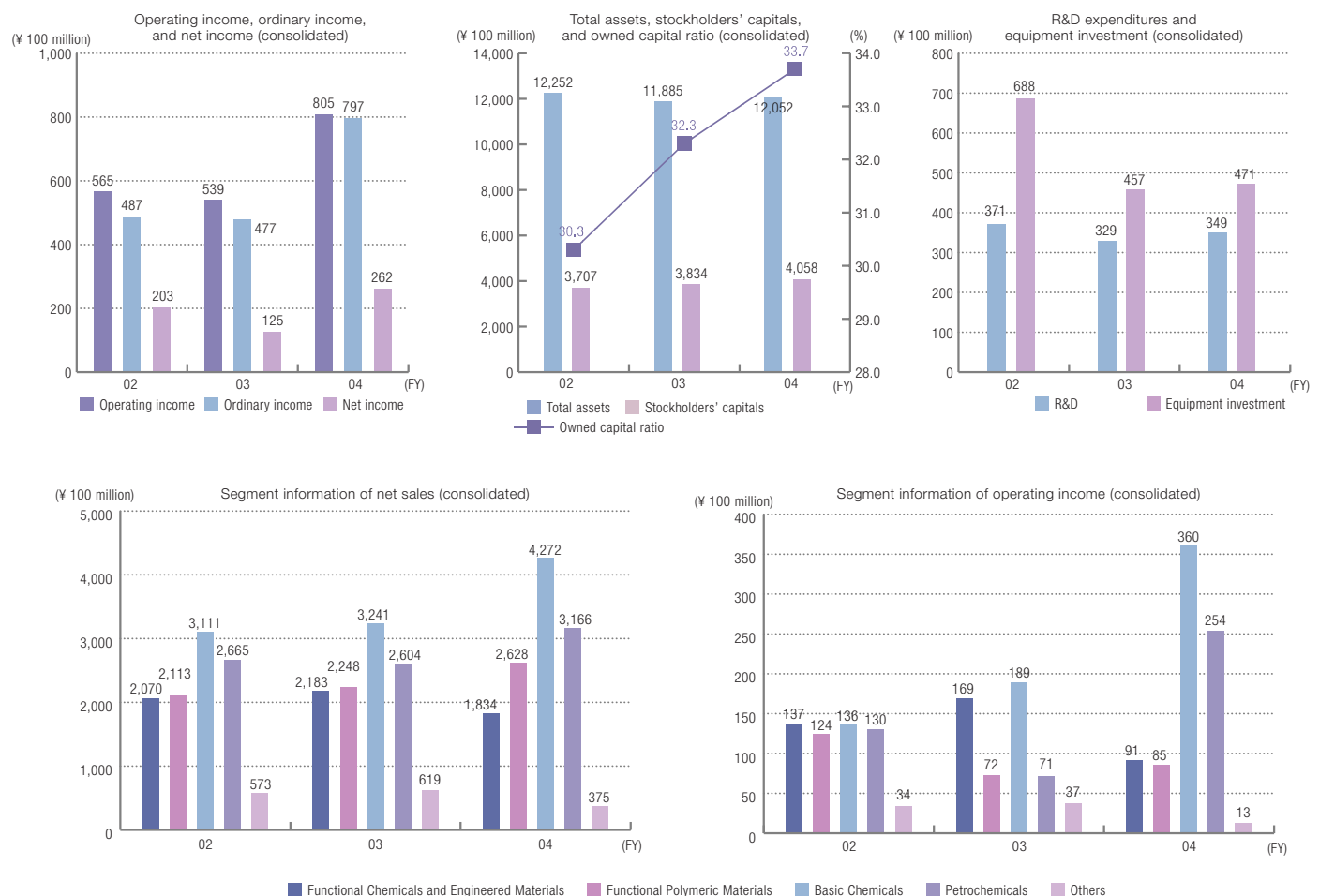
The Mitsui Chemicals Group formulated a four-year medium-term business plan in fiscal 2004 with the key concepts of “Challenge for Change” and “Shift from Commodities to Specialties.” We have been adhering to the plan since then. We will steadily implement the strategies of the plan toward sustainable development.

## Financial Highlights - Fiscal 2004 Settlement Review -

The Mitsui Chemicals Group strived to maintain reasonable product prices against upswings in prices of fuels and naphtha and other raw materials. We attained net sales of ¥1,227.5 billion and an operating income of ¥80.5 billion, an increase of ¥138.0 billion and ¥26.6 billion, respectively, compared to the previous year. We attribute the gains to a significant increase in the number of products sold as a result of an expansion of demands for the Asian market, including China.

The Mitsui Chemicals Group recorded an ordinary income of ¥79.7 billion, ¥32.0 billion higher than the previous year, thanks to a decrease in interest payments after a compression of interest-bearing debts and an increase in incomes from investments in companies in which the Group holds equity.

The gain from amortization of prior service debts associated with a revision of the retirement allowances system and other gains were reckoned up as special incomes of ¥17.1 billion, whereas the impairment loss with the early application of fixed asset impairment accounting and the loss from related business operations, and others amounted to special losses of ¥42.1 billion. Accordingly, this term's net income amounted to ¥26.2 billion, an increase of ¥13.7 billion compared to the previous year.



(For details, refer to "ANNUAL REPORT 2005.")

# PRTR Data

## Ichihara Works

Substance	Ministerial ordinance designation number	Released into air	Released into water	Released on land	Total amount released
Zinc compounds (water-soluble)	1	0.000	0.682	0.000	0.682
Aniline	15	0.349	0.000	0.000	0.349
2-Aminoethanol	16	0.000	0.000	0.000	0.000
Antimony and its compounds	25	0.000	0.000	0.000	0.000
Bisphenol A	29	0.000	0.004	0.000	0.004
Ethylbenzene	40	0.534	0.000	0.000	0.534
Ethylene oxide	42	3.429	0.000	0.000	3.429
Ethylene glycol	43	0.044	0.000	0.000	0.044
Epichlorohydrin	54	2.451	0.000	0.000	2.451
Xylene	63	5.478	0.009	0.000	5.487
Cresol	67	0.000	0.000	0.000	0.000
Vanadium pentoxide	99	0.000	0.000	0.000	0.000
Cyclohexylamine	114	0.000	0.000	0.000	0.000
Diphenylamine	159	0.000	0.000	0.000	0.000
N,N-Dimethylformamide	172	0.000	0.000	0.000	0.000
Styrene	177	0.000	0.000	0.000	0.000
Tetrachloroethylene	200	0.194	0.009	0.000	0.203
Toluene	227	16.127	0.009	0.000	16.136
Hydrazine	253	0.000	0.000	0.000	0.000
Phenol	266	0.310	0.221	0.000	0.531
1,3-Butadiene	268	0.000	0.000	0.000	0.000
Hydrogen fluoride and its water-soluble salts	283	0.000	9.736	0.000	9.736
Benzene	299	3.395	0.044	0.000	3.439
Boron and its compounds	304	0.000	6.196	0.000	6.196
α-Methylstyrene	335	0.063	0.000	0.000	0.063
Dioxins	179	5.852	0.832	0.000	6.684

## Ichihara Works Mobara Center

Substance	Ministerial ordinance designation number	Released into air	Released into water	Released on land	Total amount released
Acrylamide	2	0.000	0.000	0.000	0.000
Acrylic acid	3	0.000	0.000	0.000	0.000
Ethyl acrylate	4	0.030	0.000	0.000	0.030
Methyl acrylate	6	0.000	0.000	0.000	0.000
Acrylonitrile	7	0.008	0.000	0.000	0.008
Ethylene glycol	43	0.000	0.000	0.000	0.000
Epichlorohydrin	54	0.002	0.000	0.000	0.002
ε-Caprolactam	61	0.000	0.000	0.000	0.000
Xylene	63	0.057	0.000	0.000	0.057
Styrene	177	0.358	0.000	0.000	0.358
Terephthalic acid	205	0.000	0.000	0.000	0.000
Toluene	227	0.076	0.000	0.000	0.076
Formaldehyde	310	0.000	0.000	0.000	0.000
Phthalic anhydride	312	0.001	0.000	0.000	0.001
Maleic anhydride	313	0.001	0.000	0.000	0.001
Methacrylic acid	314	0.000	0.000	0.000	0.000
2-(Dimethylamino)ethyl methacrylate	318	0.000	0.000	0.000	0.000
Methyl methacrylate	320	0.000	0.000	0.000	0.000
Methacrylonitrile	321	0.000	0.000	0.000	0.000
Methyl-1,3-phenylene-diisocyanate	338	0.000	0.000	0.000	0.000

## Nagoya Works

Substance	Ministerial ordinance designation number	Released into air	Released into water	Released on land	Total amount released
Ethyl acrylate	4	0.003	0.000	0.000	0.003
Methyl acrylate	6	0.006	0.000	0.000	0.006
Acrylonitrile	7	0.209	0.000	0.000	0.209
Bis(2-ethylhexyl) adipate	9	0.000	0.000	0.000	0.000
2,2'-Azobisisobutyronitrile	13	0.000	0.000	0.000	0.000
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl-isocyanate	27	0.000	0.000	0.000	0.000
4,4'-Isopropylidenediphenol (also called bisphenol A)	29	0.184	0.009	0.000	0.192
Polymerization condensation product of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (also called bisphenol A type epoxy resin) (liquid only)	30	0.000	0.000	0.000	0.000
Ethylbenzene	40	0.000	0.000	0.000	0.000
Ethylene oxide	42	0.314	0.984	0.000	1.298
1,2-Epoxypropane (also called propylene oxide)	56	5.664	8.385	0.000	14.049
Xylene	63	0.000	0.000	0.000	0.000
1,4-Dioxane	113	0.048	0.000	0.000	0.048
Dichloromethane (also called methylene chloride)	145	3.081	0.000	0.000	3.081
N,N-Dimethylformamide	172	0.012	0.117	0.000	0.129
Styrene	177	0.663	0.000	0.000	0.663
1,3,5-Trimethylbenzene	224	0.491	0.000	0.000	0.491
Toluene	227	0.194	0.000	0.000	0.194
Nonylphenol	242	0.000	0.001	0.000	0.001
Phenol	266	1.511	0.000	0.000	1.511
Bis(2-ethylhexyl) phthalate	272	0.002	0.000	0.000	0.002
Benzaldehyde	298	0.017	0.000	0.000	0.017
Poly(oxyethylene) alkyl ethers (only those having 12 to 15 carbon atoms in their alkyl group, and mixtures thereof)	307	0.000	0.000	0.000	0.000
Formaldehyde	310	0.082	0.000	0.000	0.082
n-Butyl methacrylate	319	0.001	0.000	0.000	0.001
Methyl-1,3-phenylene diisocyanate (also called m-tolylene diisocyanate)	338	0.000	0.000	0.000	0.000

## Osaka Works

Substance	Ministerial ordinance designation number	Released into air	Released into water	Released on land	Total amount released
Zinc compounds (water-soluble)	1	0.000	3.348	0.000	3.348
Acrylamide	2	0.036	0.026	0.000	0.062
Acrylic acid	3	0.041	0.224	0.000	0.265
Methyl acrylate	6	0.000	0.000	0.000	0.000
Acrylonitrile	7	6.369	0.003	0.000	6.372
Acetonitrile	12	0.000	0.001	0.000	0.001
2-Aminoethanol	16	0.153	0.229	0.000	0.382
Isoprene	28	0.086	0.000	0.000	0.086
Bisphenol A	29	0.191	0.012	0.000	0.203
Ethylbenzene	40	2.460	0.004	0.000	2.464
Ethylene oxide	42	2.338	0.000	0.000	2.338
Ethylene glycol	43	0.003	0.014	0.000	0.017
Propylene oxide	56	0.000	0.000	0.000	0.000
Xylene	63	0.332	0.000	0.000	0.332
Glyoxal	65	0.424	0.000	0.000	0.424
Cresol	67	0.000	0.000	0.000	0.000
Chloroethylene	77	53.567	0.005	0.000	53.572
Vanadium pentoxide	99	0.000	1.790	0.000	1.790
1,4-Dioxane	113	0.032	0.024	0.000	0.056
Cyclohexylamine	114	0.000	0.003	0.000	0.003
1,2-Dichloroethane	116	0.059	0.000	0.000	0.059
N,N-Dimethylformamide	172	0.002	0.000	0.000	0.002
Styrene	177	6.526	0.002	0.000	6.528
Terephthalic acid	205	0.000	0.000	0.000	0.000
Water-soluble copper salts (except complex salts)	207	0.000	0.028	0.000	0.028
Toluene	227	6.503	0.001	0.000	6.504

(tons/year, mg-TEQ/year for dioxins)

## Osaka Works

Substance	Ministerial ordinance designation number	Released into air	Released into water	Released on land	Total amount released
Nonylphenol	242	0.000	0.000	0.000	0.000
Barium and its water-soluble compounds	243	0.000	0.000	0.000	0.000
Arsenic and its inorganic compounds	252	0.000	0.000	0.000	0.000
Hydrazine	253	0.000	0.103	0.000	0.103
Hydroquinone	254	0.000	0.001	0.000	0.001
Phenol	266	2.691	0.230	0.000	2.921
1,3-Butadiene	268	0.081	0.000	0.000	0.081
Benzene	299	8.277	0.106	0.000	8.383
Formaldehyde	310	0.025	0.013	0.000	0.038
Methacrylic acid	314	0.026	0.000	0.000	0.026
Methyl methacrylate	320	3.156	0.000	0.000	3.156
α-Methylstyrene	335	1.451	0.001	0.000	1.452
Molybdenum and its compounds	346	0.000	0.000	0.000	0.000
Dioxins	179	0.014	0.185	0.000	0.199

## Iwakuni-Ohtake Works

Substance	Ministerial ordinance designation number	Released into air	Released into water	Released on land	Total amount released
Acetaldehyde	11	2.033	0.000	0.000	2.033
Aniline	15	0.053	0.000	0.000	0.053
m-Aminophenol	21	0.000	0.000	0.000	0.000
Ethylene glycol	43	4.376	0.000	0.000	4.376
Xylene	63	241.070	0.292	0.000	241.362
Cresol	67	0.159	0.018	0.000	0.177
Chloroform	95	0.007	0.000	0.000	0.007
Cobalt and its compounds	100	0.000	0.000	0.000	0.000
1,4-Dioxane	113	0.000	0.000	0.000	0.000
Cyclohexylamine	114	0.099	0.201	0.000	0.300
Styrene	177	0.012	0.000	0.000	0.012
Terephthalic acid	205	0.000	0.000	0.000	0.000
Toluene	227	82.595	0.330	0.000	82.925
Nickel compounds	232	0.000	0.000	0.000	0.000
Hydroquinone	254	0.000	0.000	0.000	0.000
Phenol	266	0.012	0.367	0.000	0.379
Hydrogen fluoride and its water-soluble salts	283	0.000	0.073	0.000	0.073
Bromomethane/methyl bromide	288	104.323	0.000	0.000	104.323
Hexamethylenediamine	292	0.027	0.000	0.000	0.027
Benzene	299	27.743	0.000	0.000	27.743
Manganese and its compounds	311	0.000	0.000	0.000	0.000
Phthalic anhydride	312	0.000	0.000	0.000	0.000
Maleic anhydride	313	0.000	1.695	0.000	1.695
α-Methylstyrene	335	0.050	0.000	0.000	0.050
Molybdenum	346	0.000	0.000	0.000	0.000

## Omuta Works

Substance	Ministerial ordinance designation number	Released into air	Released into water	Released on land	Total amount released
Zinc compounds (water-soluble)	1	0.000	0.457	0.000	0.457
Acrylonitrile	7	0.015	0.000	0.000	0.015
Acetonitrile	12	16.499	12.185	0.000	28.684
Aniline	15	0.840	0.000	0.000	0.840
2-Aminoethanol	16	0.058	0.000	0.000	0.058
m-Aminophenol	21	0.000	0.000	0.000	0.000
EPN	37	0.000	0.000	0.000	0.000
Ethylbenzene	40	0.980	0.000	0.000	0.980
Ethylene glycol	43	0.000	0.000	0.000	0.000
Epichlorohydrin	54	0.724	0.000	0.000	0.724
Xylene	63	2.242	0.000	0.000	2.242
Cresol	67	0.000	0.000	0.000	0.000
Chromium and trivalent chromium compounds	68	0.000	0.000	0.000	0.000
Chloroethylene	77	40.088	0.000	0.000	40.088
Simazine	90	0.000	0.000	0.000	0.000
Chlorobenzene	93	16.718	0.000	0.000	16.718
Chloroform	95	0.294	0.000	0.000	0.294
Methyl chloride	96	0.000	0.000	0.000	0.000
Thiobencarb	110	0.000	0.000	0.000	0.000
Carbon tetrachloride	112	0.387	0.000	0.000	0.387
Cyclohexylamine	114	0.000	0.000	0.000	0.000
1,2-Dichloroethane	116	7.719	0.000	0.000	7.719
1,1-Dichloroethylene	117	0.000	0.000	0.000	0.000
cis-1,2-Dichloroethylene	118	0.000	0.000	0.000	0.000
1,3-Dichloropropene	137	0.000	0.000	0.000	0.000
o-Dichlorobenzene	139	53.813	0.249	0.000	54.062
Dichloromethane	145	8.771	0.000	0.000	8.771
Dinitrotoluene	157	0.000	0.283	0.000	0.283
2,4-Dinitrophenol	158	0.000	0.000	0.000	0.000
N,N-Dimethylformamide	172	0.183	10.703	0.000	10.886
Styrene	177	1.992	0.000	0.000	1.992
Thiourea	181	0.000	0.000	0.000	0.000
Tetrachloroethylene	200	0.000	0.000	0.000	0.000
Thiuram	204	0.000	0.000	0.000	0.000
Trichloroacetaldehyde	208	0.000	0.000	0.000	0.000
1,1,1-Trichloroethane	209	0.000	0.000	0.000	0.000
Trichloroethylene	211	0.000	0.000	0.000	0.000
Trichloronitromethane	214	0.032	0.000	0.000	0.032
o-Toluidine	225	8.502	0.000	0.000	8.502
Toluene	227	434.391	0.762	0.000	435.153
2,4-Toluenediamine	228	0.000	0.000	0.000	0.000
Nitritotriacetic acid	233	0.000	0.000	0.000	0.000
Nitrobenzene	240	2.081	0.000	0.000	2.081
Picric acid	244	0.000	0.000	0.000	0.000
Hydrazine	253	0.000	0.000	0.000	0.000
Pyridine	259	0.005	0.000	0.000	0.005
Phenol	266	1.072	0.000	0.000	1.072
Hydrogen fluoride and its water-soluble salts	283	0.000	0.015	0.000	0.015
Benzene	299	1.936	0.000	0.000	1.936
1,2,4-Benzenetricarboxylic 1,2-anhydride	300	0.000	0.000	0.000	0.000
Boron and its compounds	304	0.000	0.017	0.020	0.037
Phosgene	305	0.000	0.000	0.000	0.000
Poly(biphenyl chloride)	306	0.000	0.000	0.000	0.000
Formaldehyde	310	2.613	4.799	0.000	7.412
Manganese and its compounds	311	0.000	0.000	0.000	0.000
Phthalic anhydride	312	0.000	0.000	0.000	0.000
3-Methylpyridine	336	0.000	0.000	0.000	0.000
Methyl-1,3-phenylene diisocyanate	338	1.033	0.000	0.000	1.033
4,4'-Methylenedianiline	340	0.000	0.000	0.000	0.000
Dioxins	179	0.004	8.530	0.000	8.534

# Site Reports

## Ichihara Works

The Ichihara Works went into operation in March 1967. It is a comprehensive, self-contained petrochemical factory, with an ethylene plant at its center. Supplied feedstock materials are processed into various resins and their derivatives.

**Location:** 3, Chigusa-kaigan, Ichihara, Chiba 299-0108

**Area:** 1,390,000 m<sup>2</sup>

### Major products

- Petrochemicals:  
Olefin, aromatic hydrocarbons, polyethylene, polypropylene, and TBA
- Basic chemicals:  
Phenol, BPA, acetone, epoxy resin, ethylene oxide, ethylene glycol, and aniline
- Functional polymeric materials:  
Elastomers
- Functional chemicals and engineered materials:  
Synthetic pulp

Total calorific value of fuels (GJ)	32,015,000	Products (thousand tons)	3,611
Purchased electricity (GWh)	371	Delivered electricity (GWh)	32
Total purchased gases (million Nm <sup>3</sup> )	182	Delivered steam (thousand tons)	650
Purchased raw materials (thousand tons)	1,952	Delivered fuel (thousand tons)	8.5
Purchased materials (thousand tons)	4.8	CO <sub>2</sub> (thousand tons)	2,101
Tap water (million m <sup>3</sup> )	0	NOx (tons)	1,339
Underground water (million m <sup>3</sup> )	0.2	SOx (tons)	239
Industrial water (million m <sup>3</sup> )	25.3	Air pollutants (tons)	6.8
Seawater (million m <sup>3</sup> )	363	VOCs (tons)	873
		Dust (tons)	44
		External recycling (tons)	11,793
		External final disposal (landfill) (tons)	508
		COD (tons)	107
		T-N (tons)	50
		T-P (tons)	3.5
		Treated water (million m <sup>3</sup> )	8.6
		Released water (million m <sup>3</sup> )	388

## Nagoya Works

The Nagoya Works was founded as Japan's first factory of vinyl chloride. Now it produces basic chemicals, functional polymeric materials, functional chemicals and engineered materials.

**Location:** 2-1, Tangodori, Minami-ku, Nagoya 457-8522

**Area:** 380,000 m<sup>2</sup>

### Major products

- Basic chemicals:  
Bisphenol A
- Functional polymeric materials:  
Polyacrylonitrile resin, special phenolic resin, engineering plastic films, and polyimide products
- Functional chemicals and engineered materials:  
Surgical suture material (PGA), breathable films, surface-protective tapes, flexible printed circuit materials, and sputtering products

Total calorific value of fuels (GJ)	1,894,000	Products (thousand tons)	138
Purchased electricity (GWh)	36	Delivered electricity (GWh)	0
Total purchased gases (million Nm <sup>3</sup> )	4.6	Delivered steam (thousand tons)	0
Purchased raw materials (thousand tons)	101	Delivered fuel (thousand tons)	0
Purchased materials (thousand tons)	9.1	CO <sub>2</sub> (thousand tons)	184
Tap water (million m <sup>3</sup> )	0	NOx (tons)	57
Underground water (million m <sup>3</sup> )	0	SOx (tons)	7.0
Industrial water (million m <sup>3</sup> )	8.0	Air pollutants (tons)	3.7
Seawater (million m <sup>3</sup> )	0	VOCs (tons)	22
		Dust (tons)	24
		External recycling (tons)	9,578
		External final disposal (landfill) (tons)	2,053
		COD (tons)	81
		T-N (tons)	13
		T-P (tons)	1.0
		Treated water (million m <sup>3</sup> )	1.0
		Released water (million m <sup>3</sup> )	6.7

## Ichihara Works Mobara Center

The Mobara Center was opened as a pioneer project, a factory for comprehensive production of chemical products with the raw material of natural gas. Now it mainly produces high-performance chemical products such as functional polymeric materials, electronic materials and information materials.

**Location:** 1900, Togo, Mobara, Chiba 297-8666

**Area:** 550,000 m<sup>2</sup>

### Major products

- Basic chemicals:  
Formalin, surfactants, and flocculants
- Functional polymeric materials:  
Methacrylamide, acrylamide, unsaturated polyester resin, functional adhesives, coating resins, and paper processing resin
- Functional chemicals and engineered materials:  
Toner binders

Total calorific value of fuels (GJ)	712,000	Products (thousand tons)	118
Purchased electricity (GWh)	40	Delivered electricity (GWh)	43
Total purchased gases (million Nm <sup>3</sup> )	0.1	Delivered steam (thousand tons)	203
Purchased raw materials (thousand tons)	58	Delivered fuel (thousand tons)	0
Purchased materials (thousand tons)	1.8	CO <sub>2</sub> (thousand tons)	58
Tap water (million m <sup>3</sup> )	0.1	NOx (tons)	8.0
Underground water (million m <sup>3</sup> )	0.5	SOx (tons)	57
Industrial water (million m <sup>3</sup> )	0.6	Air pollutants (tons)	0
Seawater (million m <sup>3</sup> )	0	VOCs (tons)	0.7
		Dust (tons)	2.0
		External recycling (tons)	1,935
		External final disposal (landfill) (tons)	16
		COD (tons)	10
		T-N (tons)	3.0
		T-P (tons)	2.5
		Treated water (million m <sup>3</sup> )	0.5
		Released water (million m <sup>3</sup> )	0.5

## Osaka Works

The Osaka Works produces petrochemicals, basic chemicals, functional polymeric materials, functional chemicals, and engineered materials using large petrochemical and ammonia plants.

**Location:** 1-6 Takasago, Takaishi, Osaka 592-8501

**Area:** 1,550,000 m<sup>2</sup>

### Major products

- Petrochemicals:  
Olefin, aromatic, TBA, and polypropylene
- Basic chemicals:  
Ammonia, urea, BPA, phenol, formalin, melamine, acrylonitrile, ethanalamine, acrylamide, IPA, ethylene oxide, and ethylene glycol
- Functional chemicals and engineered materials:  
Silane gas

Total calorific value of fuels (GJ)	28,152,000	Products (thousand tons)	1,812
Purchased electricity (GWh)	467	Delivered electricity (GWh)	0
Total purchased gases (million Nm <sup>3</sup> )	157	Delivered steam (thousand tons)	1.3
Purchased raw materials (thousand tons)	1,366	Delivered fuel (thousand tons)	0
Purchased materials (thousand tons)	2	CO <sub>2</sub> (thousand tons)	2,248
Tap water (million m <sup>3</sup> )	0.1	NOx (tons)	1,132
Underground water (million m <sup>3</sup> )	0	SOx (tons)	55
Industrial water (million m <sup>3</sup> )	24	Air pollutants (tons)	71
Seawater (million m <sup>3</sup> )	84	VOCs (tons)	220
		Dust (tons)	82
		External recycling (tons)	9,919
		External final disposal (landfill) (tons)	1,411
		COD (tons)	378
		T-N (tons)	1,185
		T-P (tons)	7.4
		Treated water (million m <sup>3</sup> )	11
		Released water (million m <sup>3</sup> )	94

## Iwakuni-Ohtake Works

The Iwakuni-Ohtake Works went into operation as Japan's first comprehensive petrochemical factory in April 1958. Later, production of general-purpose olefinic petrochemical products was transferred to the Ichihara Works. Now, the works is on its way to becoming a dedicated facility for fine chemicals. Currently, its main product is highly pure terephthalic acid, a raw material for synthetic fibers, and PET resin for bottles.

**Location:** 6-1-2 Waki, Waki-cho, Kuga-gun, Yamaguchi 740-0061

**Area:** 1,000,000 m<sup>2</sup>

### Major products

- Basic chemicals:  
Purified terephthalic acid, PET resin, and MIBK
- Functional polymeric materials:  
Apel™, Arlen™, Wax, petroleum resin, Lucant™, TPX™, and Million™
- Functional chemicals and engineered materials:  
Hydroquinone, resorcinol, meta/para-cresol, Gas pipes, pellicle, and olefin polymerization catalyst

Total calorific value of fuels (GJ)		Products (thousand tons)	
9,536,000		984	
Purchased electricity (GWh)	96	Delivered electricity (GWh)	97
Total purchased gases (million Nm <sup>3</sup> )	0	Delivered steam (thousand tons)	0
Purchased raw materials (thousand tons)	621	Delivered fuel (thousand tons)	152
Purchased materials (thousand tons)	2		
Tap water (million m <sup>3</sup> )	0.1	CO <sub>2</sub> (thousand tons)	872
Underground water (million m <sup>3</sup> )	0	NOX (tons)	746
Industrial water (million m <sup>3</sup> )	27	SOX (tons)	400
Seawater (million m <sup>3</sup> )	58	Air pollutants (tons)	30
		VOCs (tons)	4,029
		Dust (tons)	59
		External recycling (tons)	4,431
		External final disposal (landfill) (tons)	1,524
		COD (tons)	475
		T-N (tons)	39
		T-P (tons)	5
		Treated water (million m <sup>3</sup> )	11
		Released water (million m <sup>3</sup> )	87

Iwakuni-Ohtake Works

## Sodegaura Center (Laboratories)

The Sodegaura Center is Mitsui Chemicals' R&D base, consisting of seven laboratories. A total of about 1,000 researchers, including subsidiaries and affiliates, are working to create new products and technologies that will contribute to a more comfortable society.

**Location:** 580-32, Nagaura, Sodegaura. Chiba 299-0265

**Area:** 300,000 m<sup>2</sup>

### R&D organizations

- Functional Polymeric Materials Laboratory:  
Functional polymeric materials and their blends and processed products
- Functional Materials Laboratory:  
Electronic circuit materials, semiconductor materials, display materials, data recording materials, and sanitation materials
- Functional Chemicals and Engineered Materials Laboratory:  
New agrochemical innovations, plant breeding, health care materials, and fine chemicals
- Catalysis Science Laboratory:  
Development of catalysts and catalytic reaction basic process from the view point of compound design.
- Materials Science Laboratory:  
Invention of new high-performance products, from molecules to complexes
- Process Technology Laboratory:  
Industrialized technology in chemistry

Total calorific value of fuels (GJ)		Products (thousand tons)	
70,000		0	
Purchased electricity (GWh)	45	Delivered electricity (GWh)	0
Total purchased gases (million Nm <sup>3</sup> )	2.7	Delivered steam (thousand tons)	0
Purchased raw materials (thousand tons)	0	Delivered fuel (thousand tons)	0
Purchased materials (thousand tons)	0		
Tap water (million m <sup>3</sup> )	0.08	CO <sub>2</sub> (thousand tons)	21
Underground water (million m <sup>3</sup> )	0	NOX (tons)	0
Industrial water (million m <sup>3</sup> )	0	SOX (tons)	0
Seawater (million m <sup>3</sup> )	0	Air pollutants (tons)	0
		VOCs (tons)	0
		Dust (tons)	0
		External recycling (tons)	348
		External final disposal (landfill) (tons)	56
		COD (tons)	0.4
		T-N (tons)	0.3
		T-P (tons)	0.018
		Treated water (million m <sup>3</sup> )	0.07
		Released water (million m <sup>3</sup> )	0.07

Sodegaura Center

## Omuta Works

The Omuta Works went into operation in 1912. It was an important plant in Mitsui's mining operations, processing by-products from the coke ovens of Mitsui Mining Company up to the mid-1960s. Now, it is the Mitsui Chemicals Group's core factory. Mainly, it produces functional chemicals and engineered materials, making use of its organic synthesis technology.

**Location:** 30, Asamuta-cho, Omuta, Fukuoka 836-8610

**Area:** 2,260,000 m<sup>2</sup>

### Major products

- Basic chemicals:  
Caustic soda and hydrochloric acid
- Functional polymeric materials:  
Urethane raw materials
- Functional chemicals and engineered materials:  
Monomers for spectacle lenses, amino acids, surfactants, special polar solvents, heat-sensitive paper materials, resin additives, dyes/pigments, functional colorants, taurine, Trebon™ (insecticide), Starkle™ (insecticide), Nebijin™ (fungicide), chloropicrin (fungicide), and pharmaceutical intermediates

Total calorific value of fuels (GJ)		Products (thousand tons)	
8,264,000		395	
Purchased electricity (GWh)	234	Delivered electricity (GWh)	16
Total purchased gases (million Nm <sup>3</sup> )	61	Delivered steam (thousand tons)	8.5
Purchased raw materials (thousand tons)	586	Delivered fuel (thousand tons)	0
Purchased materials (thousand tons)	14		
Tap water (million m <sup>3</sup> )	0.5	CO <sub>2</sub> (thousand tons)	797
Underground water (million m <sup>3</sup> )	0	NOX (tons)	887
Industrial water (million m <sup>3</sup> )	11	SOX (tons)	21
Seawater (million m <sup>3</sup> )	0	Air pollutants (tons)	64
		VOCs (tons)	852
		Dust (tons)	58
		External recycling (tons)	35,705
		External final disposal (landfill) (tons)	33,095
		COD (tons)	480
		T-N (tons)	582
		T-P (tons)	10
		Treated water (million m <sup>3</sup> )	19
		Released water (million m <sup>3</sup> )	17

Omuta Works

# Independent Comments on the 2005 Report



**Mr. Masahiko Kawamura**  
Chief Senior Researcher  
Social Development Research Group,  
NLI Research Institute

This first issue of the CSR Report with the new title is full of your enthusiasm for your newly adopted CSR management themes, which sprang from the results of your RC activities. In the Message from the President, your basic attitudes are clearly described as contributing to the creation of a sustainable society through manufacturing business activities. The cover page also demonstrates that this year's issue is aimed at increasing comprehensibility and acceptability from the viewpoint of your internal stakeholders, your employees. Formulation of the "New Corporate Action Guidelines" and appointment of "CSR Supporters" at production sites are expected to facilitate unification of the efforts in the company.

However, this year's report lacks a global viewpoint. As you aspire to be a Strong and Excellent Mitsui Chemicals Group in the world as advocated in your Corporate Target, the next issue you must tackle is how to raise awareness of "Mitsui Chemicals' CSR" among all group companies worldwide. Hence, the scope of the report poses another problem; your descriptions of the economy, environment, and society must be integrated. This report presents these aspects in separate sections, which, I think, may reflect the present status of your efforts.

Additionally, there are no specific descriptions of "promoting human well-being," "contributing to value of shareholders'," "increasing customer satisfaction," "contributing to local communities," and "promoting the happiness and fulfillment of employees," advocated in your corporate mission statement. Your report would be more effective if you clarified the goals and plans concerning these themes, described the status of implementation, and discussed some issues in implementation.

The President states, "every employee thinks of what society and our company should be in 2020." That's an idea known as back-casting, in which what should be done now is derived backward from one's goal. I hope that your sincere, steady efforts in the Mitsui Chemicals Group as a whole will earn the trust and acknowledgment of society.



**Dr. Takehiko Murayama**  
Professor, School of Science and  
Engineering, Waseda University

Reflecting the establishment of the CSR Committee in June 2005, the first half of this report presents detailed information on dialogues with stakeholders and communication with local residents through plant tours and opinion exchange meetings. A social report is featured in the latter half. I am impressed by your steady efforts which are promoting CSR activities throughout the company. I hope that you will add more detailed information on what your various divisions have done.

Still, I believe I see some issues in your efforts for environmental preservation, with regard to waste management and reduction of hazardous substances. Although I appreciate your openness in disclosing the newly discovered sources of discharge of vinyl chloride monomer and benzene, and your extensive checks, it seems rather strange that the discharge volumes of these substances are included in the past data. Additionally, last year's and other past issues graphically presented changes over time in discharge volumes at each works, which helps the reader to understand your efforts as a corporate entity. I also appreciate that the eco-efficiency has tended to rise under the increase in the net sales for the entire company compared to last year, but I encourage you to conduct further efforts to lower the environmental load unification indicator and to reduce waste.

Regarding occupational safety and health, the number of inspections performed by the management system increased about seven times compared to the previous year, and this demonstrates that you have upgraded your check system. I also appreciate that you have included data on the incidence of potential accident cases in logistics. I have to note, however, that the incidences of labor accidents and equipment accidents have tended to increase. I hope you will reinforce management system at production sites.

## Notes on the Comments

In June 2005, we established the CSR Committee and the CSR Division to promote our theme of corporate social responsibility. Accordingly, this report was revised to reflect the CSR viewpoint, and the title was changed from the Responsible Care Report to CSR Report.

We were privileged to read the independent comments on the 2005 Report. Mr. Kawamura mentioned the spread of CSR throughout group companies and suggested clarifying our contributions to the environment for the stakeholders, as we advocate in our corporate mission statement. Dr. Murayama mentioned environmental load reductions, such as those from harmful substances and industrial waste, and tightening our management concerning labor accidents and equipment accidents.

With the globalization of our business operations, we have increased the number of production sites overseas and the number of employees working there. As you suggest, implementation of CSR at domestic and overseas group companies is a key issue. We believe environmental load reduction and securing safety are the basic responsibilities of chemical companies as manufacturers creating completely new products.

We will bear these opinions and suggestions in mind and conduct a unified effort to promote CSR so as to contribute to the creation of a sustainable society.



**Katsunari Yamashita**  
Managing Executive  
Officer: General Manager,  
CSR Division

## External Awards

Date	Recipient(s)	Award	Achievement
May 2004	SMPC <sup>*1</sup>	National Safety Award	Excellent safety management system and results (sponsored by Thailand's Ministry of Labor)
September 2004	Mitsui Chemicals as a whole	Prime Minister's Award (Commendations on Excellent Health Promotion Efforts)	Achievement of remarkable results from company-wide efforts for health promotion and fitness (sponsored by the Japan Health Promotion & Fitness Foundation)
November 2004	Kashima Factory of MCI LOGISTICS (EAST), INC. Voluntary Benzene Management Council in Kashima Beach Area (including 4 other companies)	Commendations on Contributors to Atmospheric Environmental Preservation	Contribution to accomplishment of benzene level criteria in Kashima Beach Area (sponsored by Environment Ministry)
December 2004	Kawasaki Office, MCI LOGISTICS (EAST), INC.	Joint commendations (total distance traveled less than 200,000 km)	Anti-accident Competition in June - August (sponsored by Kanagawa Trucking Association)
December 2004	ADC <sup>*2</sup> (NF3 Plant, Adrian Specialty Chemicals Plant, Gary Plant)	2004 Responsible Care Achievement Award	Excellent results in self-evaluation in compliance with the Responsible Care Standards of the US Synthetic Organic Chemical Manufacturers Association (sponsored by US Synthetic Organic Chemical Manufacturers Association)
December 2004	ESCO <sup>*3</sup>	2004 Responsible Care Achievement Award	Same as above
January 2005	MEC <sup>*4</sup> Safety Committee	Recognition of activities and effectiveness in FY 2004	Accomplishment of the zero-accident, zero-disaster goal thanks to your excellent safety activities (sponsored by Cilegon City, Indonesia)
March 2005	ADC(NF3 Plant)	2004 Responsible Care Certificate of Excellence	Accomplishment of the zero-disaster goal by excellent safety activities, including employees and contractors (sponsored by American Chemistry Council)

<sup>\*1</sup> SMPC: SIAM MITSUI PTA CO., LTD. <sup>\*2</sup> ADC: Anderson Development Company <sup>\*3</sup> ESCO: ESCO Company Limited Partnership <sup>\*4</sup> MEC: P.T. Mitsui Eterindo Chemicals

## Internal Awards

### Production section commendations

Name of award	Recipient section
President's Award	Ichihara Works (Polyethylene Production Planning & Control Section-1), MITSUI CHEMICALS, INC.
Production & Technology Center Executive's Award	Iwakuni-Ohtake Works (Pellicles Section), MITSUI CHEMICALS, INC.
	MITSUMI TAKEDA CHEMICALS, INC. (Shimizu Factory)
	GRAND SIAM COMPOSITES CO., LTD (Thailand)
	Osaka Works (Functional Materials Section), MITSUI CHEMICALS, INC.
	Omuta Works (Fine Chemicals Section), MITSUI CHEMICALS, INC.
	Nagoya Works (Polyols for Urethane Manufacturing Section), MITSUI CHEMICALS, INC.
Continual Excellency Award	Eternal PLASTICS CO., LTD. (Thailand)
	SHIMONOSEKI MITSUI CHEMICALS, INC. (Manufacturing Section-1)
Excellent Plant Award	Ichihara Works Mobara Center, MITSUI CHEMICALS, INC.

## History of Activities toward "Sustainable Growth"

Year	Initiatives of the Mitsui Chemicals Group	Trends in Japan	World trends
2000	June 2005: CSR Office established March: Second International Symposium on Catalysis Science August 2004: ISO 9001, ISO 14001, and OHSAS 18001 certification acquired at all works October 2003: New personnel allocation system introduced March: First International Symposium on Catalysis Science October 2002: Framework for environment-related business operations established August: Qualified to handle high-pressure gases (Iwakuni-Ohtake Works) June: OHSAS 18001 certification acquired (Nagoya Works) April: Risk management rules formulated March: ISO14001 certification acquired (Omuta Works, Osaka Works, Shimonoseki Mitsui Chemicals) June 2001: Concept of eco-efficiency introduced Environmental accounting system introduced March: ISO 14001 certification (Ichihara Works) October 2000: The company-wide mental health promotion project formulated January: First issue of "The Responsible Care Report" published	2005: Personal Information Protection Law was enacted 2003: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances amended Japanese Association of Corporate Executives published the 15th Corporate White Paper on "Market Evolution" and "CSR Management": Toward Building Integrity and Creating Stakeholder Value International Conference on Green Sustainable Chemistry held 2002: Soil Pollution Prevention Law enacted Kyoto Protocol ratified Enforcement Ordinance for the Waste Disposal and Public Cleansing Law amended Japan Business Federation renamed the "Keidanren Charter of Good Corporate Behavior" the "Nippon Keidanren Charter of Corporate Behavior" Ministry of Economy, Trade and Bureau CSR Standardization Committee held the 1st meeting 2001: Law Concerning Special Measures against PCB enacted The Environment Ministry established 2000: Law Regarding the Promotion of the Use of Recycled Resources amended Green Purchasing Law enacted Basic Law for Establishing the Recycling-based Society Enacted	2005: Kyoto Protocol enacted 2004: Stockholm Convention on Persistent Organic Pollutants enforced 2003: 3rd World Water Forum held (Japan) COP9 (Milan Conference) held 2002: The Johannesburg Summit held COP8 (New Delhi Conference) held Report of the OECD Environmental Performance Review on Japan published Guidelines for Waste Plastics (Basel Convention WG) adopted 2001: COP7 (Marrakesh Conference) held International Freshwater Conference held (Germany) 2000: 2nd World Water Forum held (Netherlands) COP6 (Hague Conference) held
1990	October 1999: Voluntary guidelines for reduction of environmental load of atmospheric emissions (to 2005) April 1998: 1st Assembly of the Responsible Care Committee Sludge decomposition process using ozone introduced (Zero-Emissions) October 1997: Company rules concerning responsible care prepared Corporate Mission and the Basic Policy for Responsible Care formulated Mitsui Chemicals founded; Mitsui Petrochemical Industries, Ltd. and Mitsui Toatsu Chemicals, Inc. merged	1999: PRTR Law enacted Law Concerning Special Measures against Dioxins enacted 1998: Law for Promoting Measures against Global Warming enacted	1999: COP5 (Bonn Congress) held 1998: COP4 (Buenos Aires Congress) held 1997: COP3 (Kyoto Congress) held Kyoto Protocol adopted 1st World Water Forum held (Morocco) 1992: "United Nations Conference on Environment and Development (Earth Summit)" held in Rio de Janeiro, Brazil/"Rio Declaration of Environment and Development" adopted/"Agenda 21" adopted

### Editors' Postscript

Until fiscal 2004, this report was issued under the title Responsible Care Report. In fiscal 2005, the title was changed to CSR Report, including responsible care (RC) initiatives. This year's issue with the new title was chosen to make the purpose of this publication more comprehensible to stakeholders. The editors hope that all stakeholders, including both those outside Mitsui Chemicals and employees of the Group, will read this report and think about what Mitsui Chemicals' CSR needs to be in the years to come.

Although the CSR activities at Mitsui Chemicals have just begun, we hope that you have sensed Mitsui Chemicals' profound desire to create a unique CSR program precisely fitted to our capabilities and interests, under the themes of "Always in Good Faith," "For People and Society," and "Dream-Inspiring Innovation."



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### Symbol on the front cover

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The symbol on the front cover is Mitsui Chemicals' new corporate symbol. The three curving bands stand for Growth and Vitality, Chemical Technology and Innovation, and Society's Trust in the Mitsui Chemicals Group. They represent the group's ceaseless and uninterrupted growth far into the future.

### Surface treatment of the front cover

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The film laminated on the front cover is Mitsui Chemicals' plant-derived Bio-based polymers LACEA™.



This report is printed with environmentally friendly soy ink.