

**Kuraray CSR Report 2011**  
**Corporate Social Responsibility Report**

## Message from the President

All of us at Kuraray are praying for those who lost their lives as a result of the Great East Japan Earthquake, and offer our heartfelt condolences to all others victimized by the disaster.

Our Kashima Plant was shaken by the quake, but fortunately there were no injuries, toppling of machinery, or other major incidents. It was nevertheless forced to slow production for a time because parts of its supply chain were cut, and this caused concern to our customers. The Kuraray Group manufactures many products that have no parallels around the world, and we therefore are keenly aware of our social responsibility to assure their sustained supply. We are now rechecking risks from a companywide perspective to make sure that we will be able to stay in operation even in the event of contingencies that are difficult to foresee.

### Contribution to the Environment and Society

Fiscal 2011 is the last year of GS-Twins, our three-year medium-term action plan. Shortly after the crisis induced by the failure of Lehman Brothers in fiscal 2009, we posted the aim of profit structure improvement and took steps to weather the difficulties by, for example, deferring additional capital investment, compressing costs, and increasing personnel efficiency. In 2010, our Group performance made a steep recovery driven by our original products as newly emerging economies expanded at a speed exceeding all expectations and the economy in the U.S. and Europe headed for recovery as well. In fiscal 2011, we are actively promoting action on the remaining two targets of GS-Twins (creation and expansion of new business, and acceleration of our global strategy for core businesses),

toward the goal of boosting our sales to 400 billion yen and our operating income to 60 billion yen. On the agenda of creating and expanding new business, we strive to develop environmental-oriented business and have designated the fields of new energy, aqua business, and environmentally friendly materials as priority domains conducive to full exercise of our technical potential and contribution to the solution of global problems. And to accelerate our global strategy for core businesses, we are making the transition from activities centered in developed countries to the cultivation of markets in newly emerging ones, so that we can help to improve the quality of life and the environment with our original, high-performance products.

In the Medium-term Environmental Plan we formulated in 2000, we set ambitious targets mainly for our domestic sites and undertook various activities to attain them. For example, in fiscal 2010, our greenhouse gas (GHG) emissions were 11.8% lower than in fiscal 1990, and the reduction therefore bettered the targeted 10%. Held in 2010, the 16th Conference of Parties to the United Nations Framework Convention on Climate Change (COP16) produced an agreement on the basic outline of a new framework to succeed the Kyoto Protocol, but also saw a divergence of opinion among the member countries and left issues for future coordination. Japan is faced with a short supply of electricity in the wake of the disaster and under very difficult circumstances as far as further environmental efforts are concerned. We at Kuraray, however, view this crisis as a chance to build business for the future, and are working for the development and spread of technologies that reduce GHG emissions and products that contribute to the environment.



### CSR Roots

Kuraray was founded in 1926 to pursue business in rayon and became the first firm in the world to succeed in commercial manufacture of *KURALON* (PVA fiber) in 1950. Ever since, we have continued to furnish society with valuable products in the field of high-performance resins and chemicals, beginning with poval, *EVAL*, and isoprene, based on our distinctive polymerization and synthesis technology. Our development of *KURALON*, which is at the foundation of today's Kuraray, grew out of the sense of mission felt by Soichiro Ohara, who was our president at the time. Japan had suffered badly in the second world war, and he was determined to make the world's first synthetic fiber to assist its recovery and to better the lives of its people, who were struggling with shortages of all sorts of commodities. This spirit lives on in our corporate culture, under the banner of "contributing to the world and individual well-being through actions that others are unable to produce". We believe that the purpose of our business

lies in heightening the value added to the resources we receive from society by applying our unique technology, and then returning them in this high-value added form to that society, for the benefit of all. We use the profit gained from this business for investment in facilities and R&D for further growth. Besides making a return to our shareholders by paying higher dividends through the continuous improvement of our result, we make a proper return to our employees, communities, social activities, and society as a whole.

Kuraray's corporate philosophy carries on the spirit behind its founding, and is encapsulated in the words "respect for individuals", "cooperation in shared goals", and "creation of values". We consider it the essence of the social responsibility Kuraray should discharge. Japan is now being confronted with unprecedented difficulties. I hope that each and every employee of the Kuraray Group will remain undaunted by this challenge, assist Japan's recovery by pooling knowledge with each other, and continue to fulfill our obligations to society in the future as well.

Fumio Ito  
Representative Director and President  
Kuraray Co., Ltd.

A handwritten signature in black ink that reads "F. Ito".

# Corporate Profile

Company name	<b>Kuraray Co., Ltd.</b>
Representative Director and President	<b>Fumio Ito</b>
Date of establishment	<b>June 1926</b>
Capitalization	<b>89 billion yen (as of March 31, 2011)</b>
Number of employees (consolidated)	<b>6,544 (as of March 31, 2011)</b>

Head offices	<b>Tokyo, Osaka</b>
Plants and laboratories	<b>Kurashiki, Saijo, Okayama, Niigata, Kashima, Tsukuba</b>
Group companies	<b>28 consolidated subsidiaries, 4 equity method affiliates (as of March 31, 2011)</b>
Overseas operations	<b>USA, Germany, Belgium, China, Singapore, India, Brazil</b>

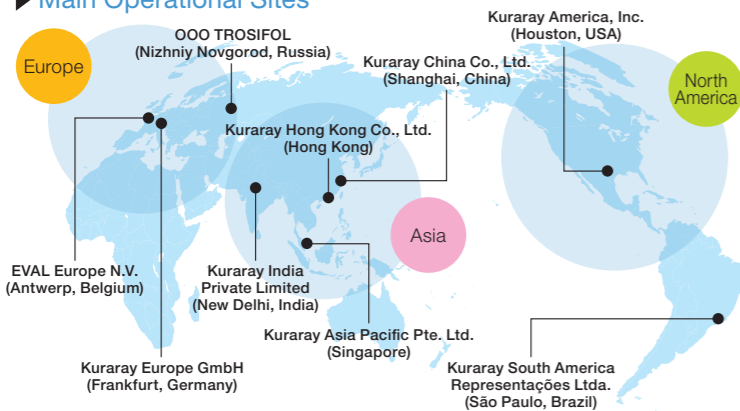
## Business Outline

Kuraray Co., Ltd. was founded in Kurashiki, Okayama Prefecture in 1926 for the purpose of commercializing the chemical fiber rayon. Ever since, it has applied its original technology to create products that did not exist before. It became the first company in the world to commercially manufacture *KURALON* (PVA fiber) based on domestic technology, and followed this with production of poval resin, which was created as the base resin for *KURALON*; photochemical poval film, which is indispensable for LCD devices; *EVAL*, which has excellent gas barrier features; and a host of isoprene chemical products born of the world's only synthesis method. We are also doing business in products familiar to ordinary consumers, such as *CLARINO*, a man-made leather which duplicates the structure of natural leather, and *MAGIC TAPE* surface fasteners.

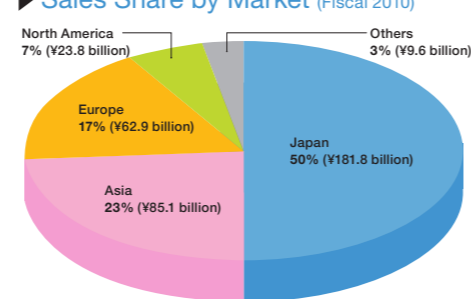
## Overseas Operations

Drawing on its distinctive technology, the Kuraray Group is developing business overseas based on its policy of producing in the optimal location and marketing in the optimal location. Its overseas network has expanded to 39 sites in a total of 16 countries and regions.

### Main Operational Sites

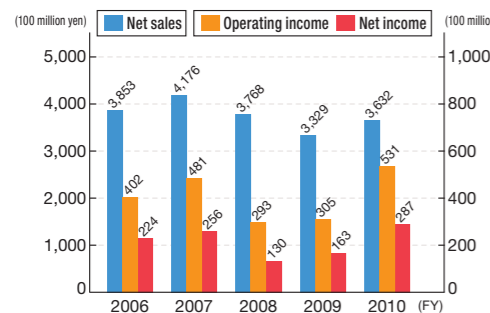


### Sales Share by Market (Fiscal 2010)

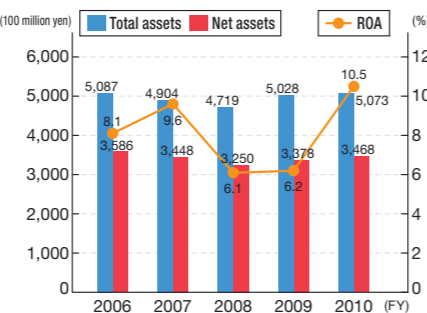


## Kuraray Group Financial Highlights (Fiscal 2010)

### Trend in Consolidated Business Performance

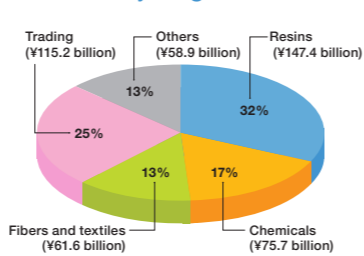


### Trend in Consolidated Total Assets, Net Assets, and ROA\*



\*ROA = Return on Assets

### Consolidated Net Sales Share by Segment (Fiscal 2010)\*



\* Sales figures include sales to external customers and the amount of cross-segment internal sales and transfers. They do not include elimination or the companywide amount of 95.6 billion yen.

## Editorial Policy

### Reporting Period

From April 1, 2010 to March 31, 2011  
(Some activities conducted before or after the reporting period are included.)

### Reference Guidelines

GRI Sustainability Reporting Guideline (Version 3.0),  
Ministry of Environment's Environmental Report Guidelines (2007 Edition)

### Scope of the Report

#### Safety and Environment

– Reports focus on Kuraray Co., Ltd. and domestic affiliated companies, but also include some overseas affiliated companies

#### Social

– Current progress of projects covering a variety of concerns. Reports focus on Kuraray Co., Ltd., but also include some affiliated companies

#### Economic

– Kuraray Co., Ltd., consolidated subsidiaries, and equity method affiliates (total 33 companies)

## The Kuraray Group (Consolidated Subsidiaries)

Domestic	Kuraray Co., Ltd.	Kuraray Group companies
	Kuraray Medical Inc.	
	Kuraray Engineering Co., Ltd.	
	Kuraray Techno Co., Ltd.	
	Kuraray Business Service Co., Ltd.	
	Kyosei Chemical Co., Ltd.	
	Kuraray Saijo Co., Ltd.	
	Kuraray Tamashima Co., Ltd.	
	Kuraray Kuraflex Co., Ltd.	
	Kuraray Chemical Co., Ltd.	
	Kuraray Trading Co., Ltd.	
	Kuraray Plastics Co., Ltd.	
	Ibuki Kosan Co., Ltd.	
	Iruma Country Club Co., Ltd.	
	Kuraray Living Co., Ltd.	
Techno Soft Co., Ltd.		
Overseas	Kuraray America, Inc.	Overseas affiliated companies
	Kuraray Europe GmbH	
	EVAL Europe N.V.	
	OOO TROSIFOL	
	Kuraray Asia Pacific Pte. Ltd.	
	Kuraray (Shanghai) Co., Ltd.	
	Kuraray Trading (Shanghai) Co., Ltd.	
	Kuraray Hong Kong Co., Ltd.	
	Kuraray Holdings U.S.A., Inc.	
	Kuraray America, Inc.	

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All italicized product names in this report are trademarks of the Kuraray Group.

# Social Responsibility at Kuraray

## Management

Kuraray's corporate philosophy is based on respect for each individual, and on using creative technological skills to produce materials that fill a need in people's lifestyles. What we value is the attempt to contribute to society.

In accordance with this philosophy, we regard it as our raison d'être to make a proper return to society as a good corporate citizen of society and contribution to preservation of the natural environment and to sustained social advancement. We likewise believe that our social responsibility as a company lies in efforts to these ends, while respecting the interests of all of our stakeholders, meaning our shareholders, suppliers, consumers, local residents, and employees.

**Corporate Philosophy**

- Respect for individuals
- Cooperation in shared goals
- Creation of values

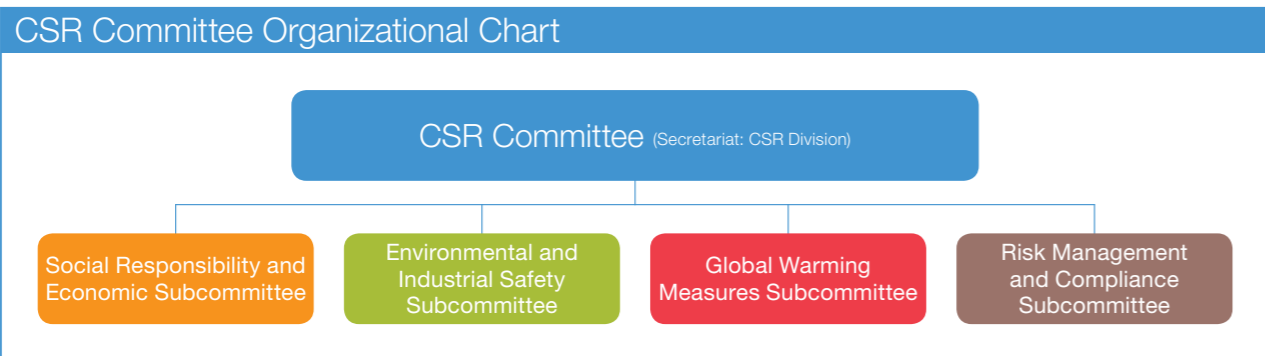
**Corporate Mission**

We in the Kuraray Group are committed to opening new fields of business using pioneering technology and contributing to an improved natural environment and quality of life.

## CSR Promotion Structure

In 2003, Kuraray instituted the CSR Committee by integration of the Philanthropy and Environment Committee and In-house Ethics Committee, and bolstered its CSR promotion structure on the Group level. Under the CSR Committee are arrayed four subordinate committees as specialized units on the management level (i.e., the Social Responsibility and Economic Subcommittee, Environmental and Industrial Safety Subcommittee, Global

Warming Measures Subcommittee, and Risk Management and Compliance Subcommittee). These committees examine companywide policies and targets and report on the same to management. The theme-specific working groups making up the subordinate committees collaborate with various Group units in addressing their respective agenda based on the CSR-related policies.

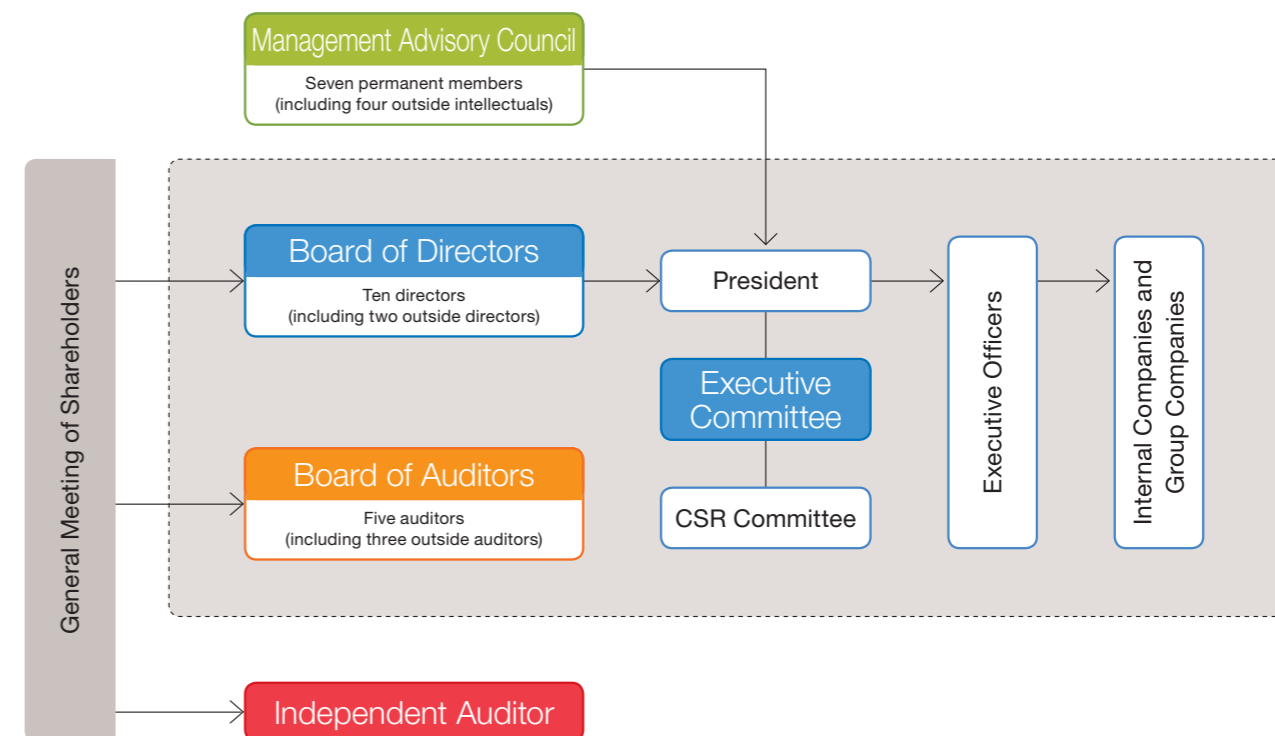


## Corporate Governance

We at Kuraray view corporate governance as necessary for maintenance of sound relations with our shareholders and the various other parties in society with a stake in our company. We consider it vital not only for improving our performance and assisting our sustained growth as a company but also for fulfilling our responsibility to society.

In fiscal 2003, we executed a program of reform in which we reinforced the Board of Auditors by adding more

outside auditors, established the Management Advisory Council, reduced the prescribed number of corporate directors while shortening their term, and instated the executive officer system in order to separate the functions of supervision and execution. In fiscal 2008, we made further arrangements for corporate governance by appointing external members to the Board of Directors.



- The Board of Directors has a membership of ten, including two outside directors. Besides making decisions on matters of importance to management, it monitors and supervises the execution of business in accordance with the basic guidelines for internal control.
- We introduced the system of executive officers to separate the duties of management-related supervision from those of business execution. The executive officers are appointed by the Board of Directors, and some are also members of the Board who have been granted executive authority. They serve as the heads of internal companies, divisions, subsidiaries, and major functional units, and are responsible for business execution and results.
- The Board of Auditors has a membership of five, including three outside auditors. The corporate auditors attend Board of Directors meetings and other important conferences, and monitor the execution of duties by corporate directors through activities such as hearings on business execution status and audit visits to Group business locations.
- The Management Advisory Council is composed of seven permanent members, including four external ones with a wealth of experience in management and legal affairs. It

offers advice to the President on matters such as Kuraray Group's management policies and important issues, business plans, succession of the President, successor candidates, and remuneration, with attention to compliance with laws and regulations, protection of shareholder interests, and management transparency.

- In June 2007, Kuraray began to implement "measures against large-scale purchases of Kuraray shares (Anti-Buyout Measures)". The general meeting of shareholders held in June 2009 approved a revision of these measures and their extension for another three years. In response to buyers who do not follow the rules or to purchasing behavior that is seriously damaging to our corporate value or the common interests of our shareholders, the Board of Directors will determine whether or not countermeasures must be taken. In making this determination, the Board will follow the prescribed procedures and accord full respect to the advice of a Special Committee composed of four members appointed from the group of outside directors and outside auditors.

Web > <http://www.kuraray.co.jp/en/ir/strategy/governance.html>

## Risk Management

To enhance our management structure on the Group level, we are making an overall review of and provisions for risk management. Based on the self-assessments made by the heads of divisions, plants, subsidiaries, and administrative organizations, we are identifying actual risks and having the CSR Committee (Risk Management and Compliance Subcommittee) deliberate on those judged to be major ones that could have a substantial impact on our management. In addition, our executives make their own judgments on situations as regards important business risks, determine basic Group policy for their management, and issue instructions for requisite specific guidelines. In this context, our approaches emphasize the detection of latent risks of a spontaneous nature that are both difficult to foresee and significant, and the classification and quantification of risks from a companywide perspective in

order to build setups for priority countermeasures. Because the Kuraray Group has many businesses that command large shares of the market and rest on original technology, we are also integrating individual risks and reevaluating them from the standpoint of business continuity as well.

In addition, we confirm and improve the status of risk management through a variety of risk checking systems, including our security control program, environment and safety management system, and assessment of internal control related to financial statements.

We have instated a setup for the establishment of the Emergency Command Center headed by the President, for swift action in response to occurrence of any major emergency situation.

## Compliance

Kuraray has built an organizational culture in which executives join with each and every employee in taking action underpinned by a keen sense of ethics as good citizens. We have mounted approaches to compliance that go beyond the mere observance of laws and regulations in order to assure corporate transparency and fairness.

Our Principles for Business Conduct were established in 1998 for the purpose of seeing that all of our business activities are at harmony with the global environment and civil society in light of our wide-ranging involvement with that society. They set forth proper patterns of behavior for each employee. Then in 2003, the Compliance Declaration was published to clearly state that “we will give precedence to laws and regulations, and to the Principles for Business Conduct, over corporate profits”. In 2005, we compiled the Compliance Handbook, which consists of the Kuraray Group Code of Conduct describing the Principles in specific terms and the Compliance Guidelines with examples and commentary on them, and provided all of our domestic employees (including part-time, contract-based and temporary staff) with a copy of the Handbook for education. In 2009, we published the second edition of the Compliance Handbook with revised contents. To reflect situations at our overseas locations, we prepared separate editions for different countries, i.e., a US edition in 2007, German and Chinese editions in 2008, Belgian edition in 2009, and Singaporean edition in 2010. These editions were distributed to our subsidiaries in these countries, which are using them for employee education.

We also distribute the Compliance Card\*, which spells out our management stance on compliance, to all members of our Group in Japan, to make sure that all employees know of our internal reporting system.

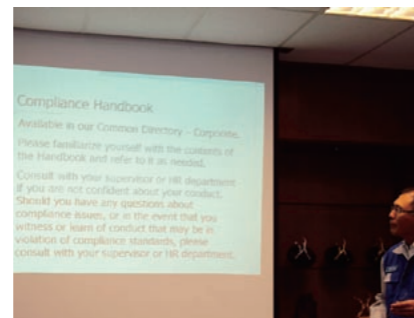
The Principles and the Code are disclosed on our website.

### Principles for Business Conduct

- We will develop and provide products and services, giving full consideration to safety.
- We will conduct businesses in a free, fair and transparent manner.
- We will maintain good communications and build a sound relationship with society.
- We will strive to preserve and improve the global environment and to secure safety and health.
- We will respect intellectual properties including trade secrets and control information properly.

### Compliance Declaration

- 1 We will comply with the laws and regulations or the Principles for Business Conduct.
- 2 We will give precedence to laws and regulations, and to the Principles for Business Conduct, over corporate profits.
- 3 We will strive to prevent any act that goes against laws and regulations or the Principles for Business Conduct, or that betrays the trust that society has placed in us.



Use of the Singaporean edition of the Compliance Handbook in the classroom

Web <http://www.kuraray.co.jp/en/csr/conduct.html>

### Compliance Card

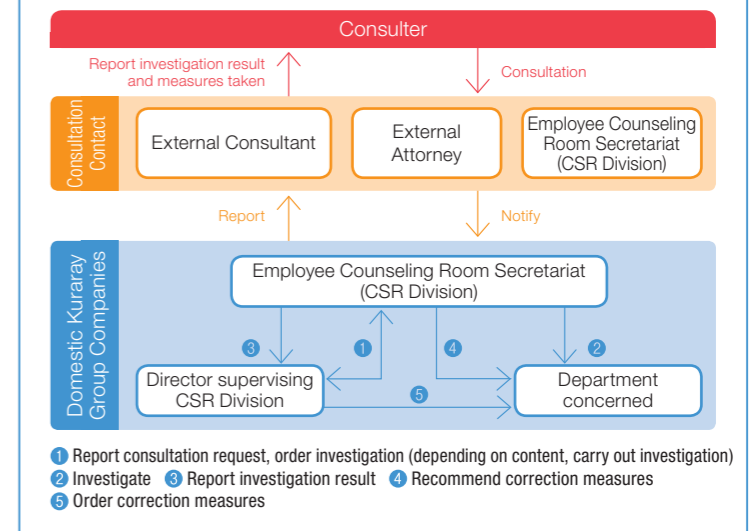
A card containing the President's Compliance Declaration and our corporate philosophy, Principles for Business Conduct, and contact number of the internal reporting system. Beginning in 2003, it was distributed to all employees of the Kuraray Group in Japan, including temporary staff. Employees are instructed to carry the card with them at all times.

## Internal Reporting System

We set up the Kuraray Group Employee Counseling Room as the center of our internal reporting system for all employees of domestic Group companies (including temporary staff). The system is aimed at preventing compliance violations as well as early detection and resolution of the same. We also provide our employees with information on methods of internal reporting and rules for protection of informants through our intranet and on the Compliance Card. In addition, our overseas affiliated companies have each set up their own internal reporting systems.

Furthermore, each of our offices is equipped with a special consultation office related to sexual harassment, staffed with personnel including female employees.

## Internal Reporting System



## Communications

To assure its accountability to society as a whole, Kuraray practices timely and appropriate disclosure of information, in line with the Kuraray Group Disclosure Policy formulated in May 2007, to the whole spectrum of stakeholders (shareholders, customers, suppliers, employees, local communities, etc.).

Web <http://www.kuraray.co.jp/en/disclosure.html>

## IR Activities

In keeping with its emphasis on reliability and fairness in its provision of investment information, Kuraray conducts IR activities for shareholders and investors. In addition to holding results briefings for institutional investors, we work for a full provision of information to general investors through video footage of results briefings and our general meeting of shareholders on our website. As a new initiative, we held a tour for shareholders at our Okayama Plant to give them a firsthand look at a production site and deepen their understanding of our activities.



Plant tour meeting

Web <http://www.kuraray.co.jp/en/ir/>

## Publicity and PR Activities

The Kuraray Group is engaged in publicity activities for timely provision of information on our current status. Besides announcements of corporate news through regular news agencies, we have a full assortment of tools for this purpose, including display of the latest company information on our website and preparation of pamphlets and videos.

Similarly, to raise recognition of our company, we are promoting PR activities that encompass approaches to communication with our stakeholders through exhibits, events, and other doings as well as the corporate advertising campaign centered around TV commercials begun in 2007.

As a part of this communication, we have been exhibiting at Eco-Products, Japan's largest environmental exhibition, since 2005. In 2010, under the theme of “Mirabakesso\* for the earth” we displayed environment-oriented products and systems in the three spheres of the environment, energy, and optics and electronics.



Eco-Products 2010 was held on December 9-11, 2010

### Mirabakesso

A keyword used in the Kuraray Group's corporate advertising campaign, which is a contraction of the catchphrase, “Mirai ni Bakeru Shinsozai”. Translated from the Japanese, it means: “New materials that transform into the future”.

# Approaches to Safety

## Safety

The Kuraray Group has a safety management system for detection of risks of occupational and safety-related accidents to prevent any such occurrences. We operate this system to make workplaces that are safe and free of accidents and disasters by heightening the safety awareness of employees. Similarly, in preparation for the event of accidents and disasters, we conduct drills to curtail damage to the minimum. We also attempt to prevent any recurrence through sharing of information on actual cases and their lessons.

### Safety Management

Concepts on Occupational Safety and Disaster Prevention

“Safety is the Cornerstone of Everything We Do”

#### Basic Policy on Occupational Safety and Disaster Prevention (Fiscal 2011)

- 1 Ensuring “Safety First, Production Second”
- 2 Do “CHECK” based on a fundamental principle, implement “Safety First” (CHECK: confirmation before taking every action)
- 3 All employees have a strong will for achievement of zero accidents and disasters

In accordance with the Safety Activity Management Regulations determined in May 2007, the domestic Kuraray Group companies prepare safety plans every fiscal year in their efforts to assure occupational safety and disaster prevention.

To be more specific, each year, at a meeting of our Safety Promotion Committee attended by the President and the assigned executive officer, we make an overall assessment of the results of safety activities and determine policy for such activities in the coming fiscal year. We have each plant and unit establish its own policies and goals based on this corporate policy, reflect them in its concrete action plans, and pursue activities in accordance with

the plans. Twice a year, a group of safety representatives from the headquarters, including the assigned executive officer, visits each plant to conduct Site Safety Inspections in aspects such as the drafting of action plans, and action taken based on these plans and its results. The findings of this inspection are reflected in the activity policy for the next fiscal year.

Since fiscal 2009, each unit has been operating the Safety Level Evaluation System, which was formulated as a tool to objectively assess the level of safety and weak points in each unit. This has enabled each unit to carry out safety activities with a focus on appropriate items efficiently and effectively.

### Targets and Actual Results

Item	Scope	Goals for achievement	FY2010			FY2011 target
			Target	Actual results	Evaluation	
Occupational safety Number of lost-time injury incidents	Domestic Kuraray Group companies	0 incidents	0 incidents	3 incidents	△	0 incidents
		Safe and comfortable workplaces, establishment of safety climate	Spread of the Safety Level Evaluation System to all units, and rooting in them	Evaluation in each unit; room for improvement in respects such as evaluation standards, but the System was judged usable for objective assessments of levels of safety	◎	<ul style="list-style-type: none"> <li>• Rise in the level of awareness of safety assurance on the part of each employee</li> </ul>
Disaster prevention Number of disasters	Domestic Kuraray Group companies	0 incidents	0 incidents	1 incidents	△	0 incidents
		Intrinsic safety of plant facilities	Implementation of omission-free risk assessment and corresponding countermeasures related to disaster prevention	Systematic identification, evaluation, and improvement on risks to disaster prevention in line with the Risk Management Rules at Kuraray Plants	◎	<ul style="list-style-type: none"> <li>• Specification of sources of danger related to safety-related accidents, and identification and assessment of safety assurance risks</li> </ul>
		Provision of a safe construction environment in outsourced work	Sure confirmation of safety at the time of transfer of responsibility to a construction company, by means of safety confirmation sheets and maintenance specification sheets	◎		

Evaluation ◎: achieved ○: largely achieved △: further effort required

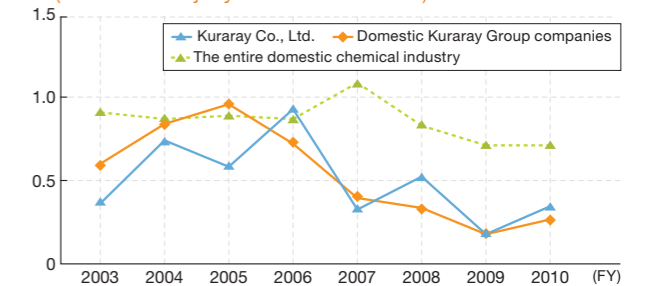
### Occupational Safety

We at the Kuraray Group recognize that ensuring employee safety and health is the very basis of a company’s business activity. Through properly operating our occupational safety management system, we strive to improve the level of safety for the entire organization as well as each employee toward our goal of safe, accident-free workplaces.

In fiscal 2010, we had each unit conduct assessments based on the Safety Level Evaluation System, which was formulated in fiscal 2009. The purpose was to identify the weak points in safety activities in each unit and make the results of safety activities visible in terms of the safety level. By so doing, we executed safety activities with closely circumscribed objectives that were both efficient and effective. There were five occupational safety incidents (three lost-time injuries and two no lost-time injuries), and this did not represent an improvement from fiscal 2009, when the same number was recorded (two lost-time injuries and three non lost-time injuries). We nevertheless believe that the level of safety in each unit is steadily rising.

In fiscal 2011, we are actively making efforts to heighten awareness of safety on the part of each employee in addition to the activities for raising safety levels on the unit level, toward our goal of bringing the number of lost-time injuries to zero.

#### Trend in Occupational Safety Performance (Lost-time Injury Incidence Rate\*)



**Lost-time injury incidence rate**  
 Number of injuries per million work hours  
 = Number of injuries / Number of hours worked × 1,000,000

#### Number of Occupational Injuries

	FY2006			FY2007			FY2008			FY2009			FY2010		
	Lost-time	No lost-time	Total	Lost-time	No lost-time	Total	Lost-time	No lost-time	Total	Lost-time	No lost-time	Total	Lost-time	No lost-time	Total
Kuraray	5	1	6	2	0	2	3	0	3	1	0	1	2	1	3
Domestic affiliated companies	4	5	9	3	4	7	1	1	2	1	3	4	1	1	2
Domestic Kuraray Group companies total	9	6	15	5	4	9	4	1	5	2	3	5	3	2	5
Domestic subcontracting companies*	1	0	1	7	2	9	1	2	3	1	0	1	0	0	0
Overseas affiliated companies	3	0	3	5	4	9	12	1	13	8	1	9	9	3	12

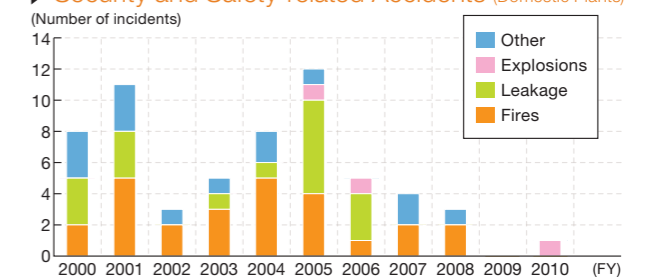
\* Companies performing contracted work in Kuraray plants

### Safety Assurance and Disaster Prevention

At the Kuraray Group, we consider it our major responsibility to prevent the occurrence of explosions, fires, leakage of hazardous substances, and other accidents and disasters that could have an immense impact on society, as well as to curtail the damage in the event of any occurrence to the minimum level. For risk management to this end, we are placing particular emphasis on safety inspections and modification management when installing new equipment or remodeling existing equipment and when changing operating conditions and other factors. In addition, we have mounted companywide approaches in areas such as risk assessment related to safety and disaster prevention (based on HAZOP\*, etc), quake-proofing measures for buildings and plants, conditioning of the security management system for facilities, and disaster-response drills.

In June 2010, nevertheless, one machine ruptured during a check of facilities after periodic repair at the Kashima Plant. Fortunately, no one was injured, but this accident pointed to a shortcoming in safety assurance risk management during the check, which had been considered safe. It was consequently decided to go back to the basics in fiscal 2011 and undertake activities to specify sources of danger and make reviews related to

#### Security and Safety-related Accidents (Domestic Plants)



safety assurance from various perspectives.

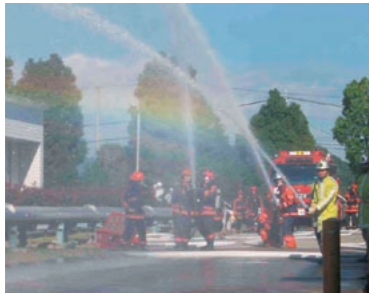
In the Great East Japan Earthquake that struck in March 2011, our Kashima Plant and Tsukuba Research Center (in the respective cities of Kamisu and Tsukuba, Ibaraki Prefecture) experienced strong tremors, but there was no major damage to their production or research facilities, thanks to the effects of anti-quake measures and training conducted to date. Appropriate response prevented the incidence of any deaths, injuries, or accidents.

#### HAZOP

Hazard and Operability Study: A technique for the drafting and analysis of scenarios for hazards in chemical processes.

## General Disaster-prevention Drills

In its production activities, the Kuraray Group handles a huge amount of hazardous substances and high-pressure gas. In readiness for accidents or disasters, each plant is equipped with fire-prevention and -extinguishing facilities, and has an emergency team organized, which regularly conducts drills. In fiscal 2010, these teams conducted drills on the assumption of various situations, including



Disaster-prevention drill at the Kurashiki Plant

occurrence of fires, leakage of hazardous substances, earthquakes, and tsunami at night and on holidays as well.

In addition, because major accidents require crisis management on a companywide scale, we also conduct drills involving the Emergency Command Center with the participation of the President and other representatives of each division at our headquarters. In fiscal 2010, we used a rupture accident that occurred in the Kashima Plant in June as the subject of a drill premised on the death of two employees, and confirmed coordination between the Plant and the headquarters.



Scene in the Emergency Command Center during a drill

## Quality Assurance

### Quality Management System

The Kuraray Group engages in activities to assure quality based on performance of the PDCA cycle as part of our quality management system (in accordance with ISO 9001 and other standards). We collect product information on items such as customer needs and degree of satisfaction, and strive to improve product quality in line with this quality management system as well as our Basic Policy on Product Safety and Action Guidelines for Product Safety.

### Quality Management System Certifications

(As of March 31, 2011)

#### ① ISO 9001

- Kuraray Niigata Plant
- Kuraray Kashima Plant
- Kuraray Okayama Plant
- Kuraray Kurashiki Plant  
(Membrane Production and Development Dept., Poval Film Production and Technology Development Dept.)
- Kuraray Tamashima Co., Ltd. (Ester Plant)
- Kuraray Saijo Plant
- Kuraray Plastics Co., Ltd. (Ibuki Plant)
- Kuraray Chemical Co., Ltd. (Tsurumi Plant)
- Kuraray Fastening Co., Ltd. (Maruoka Plant)
- Kuraray Engineering Co., Ltd.
- Kuraray Trading Co., Ltd.  
(Chemicals & Industrial Materials Div., Belt Products Dept.)
- Kuraray Techno Co., Ltd.  
(Building Maintenance Service Division)
- EVAL Europe N.V.
- Kuraray Europe GmbH  
(Division PVA/PVB, Division TROSIFOL)
- Kuraray Dental Benelux B.V.
- Kuraray America, Inc. (EVAL BU, SEPTON BU)
- Kuraray Asia Pacific Pte. Ltd.

Note: The following Group companies occupying the same premises as Kuraray plants are included.  
Kuraray Saijo Co., Ltd., Kuraray Kuraflex Co., Ltd., Kuraray Okayama Spinning Co., Ltd., Kuraray Techno Co., Ltd., KC Processing Co., Ltd.

#### ② ISO 13485 (Medical devices)

- Kuraray Medical Inc.

#### ③ ISO/TS 16949 (Automotive production and relevant service part organizations)

- EVAL Europe N.V.
- Kuraray Europe GmbH (Division TROSIFOL)
- OOO TROSIFOL

## Logistics Safety

To prevent damage to society at large due to logistics accidents, we are engaged in an ongoing promotion of activities to assure logistics safety in the aspects of product shipment and storage. The Logistics Safety Conference, which leads these activities, entered its tenth year, and

conducted safety training (two sessions with a total of 44 participants) on subjects including logistical safety in transport. The training was provided for logistics personnel and concerned mainly the transport and storage of hazardous cargo and general cargo.

## Product Safety

### Basic Policy on Product Safety

The Kuraray Group endeavors to contribute to creating an affluent, comfortable society by meeting customer needs through the supply of safe and reliable products.

### Action Guidelines for Product Safety

- ① Supply products that meet the level of safety expected by society in compliance with safety-related laws and regulations and on the basis of the latest technologies.
- ② Minimize any anticipated risk associated with the products we supply.
- ③ Maintain an appropriate quality management system to ensure that all products meet requisite quality and safety standards.
- ④ Provide accurate product information to customers and end users to prevent accidents due to inappropriate use or handling.
- ⑤ Strive to develop safer products and improve product safety technologies.
- ⑥ Strive to strengthen information gathering and internal and external cooperative frameworks to ensure and improve product safety and quickly respond to accidents.
- ⑦ Strive to raise product safety awareness among all employees and develop product safety specialists.

The Kuraray Group regards the provision of safe products as the very foundation of its corporate activities. Our Principles for Business Conduct state our commitment to the development and provision of products and services with full account of safety (see page 7).

Furthermore, to provide products that are adapted to diversifying needs and in conformance with laws and regulations, we have determined our Basic Policy on Product Safety and Action Guidelines for Product Safety.

### Promotion Structure

Activities related to quality control and product safety are led by the concerned departments and affiliated companies on a routine basis, while companywide tasks are addressed by the CSR Division (Quality Assurance Group), which serves as the secretariat and deliberates on countermeasures and initiatives for improvement by drawing on the know-how and experience of concerned units. Fiscal 2010 saw deliberation on product safety measures by the concerned department and the CSR Division in connection with the provision of materials for new applications in fields such as medical services and civil engineering. Similarly, chemical substance management is basically led by the concerned departments and affiliated companies, and monitored by the CSR Division (Quality Assurance Group).

### Product Complaints Handling

Kuraray emphasizes fast handling to customer complaints regarding quality, in accordance with its quality management system and Regulations on Product Liability-related Accident Response and Quality Complaint Report. We receive the customers' opinions and requests sincerely, and use them in our business activities.

Within the entire Kuraray Group, there were no product recalls or accidents of the sort to cause significant harm to health or fires in fiscal 2010.

### PL (Product Liability)

The term refers to the liability of businesses manufacturing or processing a product for payment of compensation for any harm caused to life, body, or property due to defects in said product. When a causal relationship can be proven between the damage and the product defect, the manufacturer bears responsibility for compensation regardless of the presence or absence of negligence.

## Chemical Substance Management

In accordance with the General Management Regulations for Chemical Substances and other regulations, the Kuraray Group ascertains conformance with laws and regulations and the degree of risk and hazard related to chemical substances at the stages of development, manufacture, and sales. To assure the safe handling of chemical substances, we established Material Safety Data Sheet (MSDS\*) Management Regulations, and prepare and provide the sheets, which present information on proper ways of handling products and their degree of hazard. Even for products not containing substances stipulated by law as MSDS subjects, we prepare MSDS on our own initiative. For key products, we also provide such information on our website.

Under the EU REACH\* regulations, December 1, 2010 was the deadline for registration of chemical substances, more than 1,000 tons of which we manufacture or import in Europe every year. Through preparations led by the European members of our Group, we completed such registration for the chemical substances we manufacture or import there.

**Web** <http://www.kuraray.co.jp/en/products/msds/index.html>

### Material Safety Data Sheet (MSDS)

MSDS provides the detailed and essential information necessary to ensure the safe handling of chemical products, and includes substance names, supplier, category, hazard classification, safety measures and emergency countermeasures.

### REACH (Registration, Evaluation, Authorization and Restriction of Chemicals)

REACH constitutes the EU regulations for chemical products. The REACH regulations incorporate new approaches, mainly as follows: 1) treatment of the risk assessment formerly made by government authorities as a manufacturer obligation, 2) imposition of a requirement for registration of not only new chemical substances but also existing ones by each manufacturer, 3) reinforcement of two-way sharing of information on chemical substance safety and handling through the supply chain, and 4) requirement for determination of information on the presence or absence and, if present, the purpose of chemical substances contained in articles. The regulations became effective in June 2007.

# Approaches to the Environment

## Environmental

Besides aspiring to harmonization with the environment in our business development and provision of products, the Kuraray Group is engaged in ongoing approaches to preserve the environment in various ways, including operation of an environmental management system in conformance with ISO 14001, promotion of measures to prevent global warming, reduction of emissions of chemical substances, and effective use of resources.

### Environmental Management

#### Kuraray Group Action Guidelines for the Global Environment

##### ◆ Basic Guidelines

The basic guidelines for environmental conservation require that we fulfill our responsibility to future generations through sustainable corporate activities that are in harmony with the global environment and the local community. In order to achieve these basic guidelines, we will undertake the following activities.

- 1 We will assign the highest priority to the environment and safety in the course of our corporate operations.
- 2 We will work to improve the global environment and ensure its sustainability.
- 3 We will develop technologies and products that contribute to the goal of improving the global environment.

##### ◆ Action Principles

- 1 Continual reduction of designated chemical substance emissions into the environment
- 2 Contribution to the prevention of global warming
- 3 Promotion of conservation, reuse and recycling of resources
- 4 Development and supply of technologies for improving the environment and products with low environmental impact
- 5 Utilization of environmentally friendly products
- 6 Public disclosure of environmental information and dialog with the community
- 7 Raising the levels of environmental consciousness and environmental management
- 8 Cooperation with stakeholders

#### Promotion Structure for Environmental Preservation

Kuraray's companywide, medium- to long-term environmental preservation activities are facilitated by the Global Warming Prevention Committee and Environmental and Industrial Safety Committee which were established in the CSR Committee. These committees work on promoting global warming solutions, reduction of chemical substance emissions, and effective use of resources for the whole Kuraray Group. The Environmental and Industrial Safety Management Center has been set up in the CSR Division, and Environmental and Industrial Safety Departments and Sections have also been established at each Kuraray plant and affiliated company as companywide generalization function of environmental preservation.

Our plants and affiliated companies have acquired certifications (under ISO 14001) for their environmental management systems and have been taking action for environmental improvement. In fiscal 2009, we began applying our Environmental Activity Management Regulations, which stipulate coordination between our headquarters and plants, and promote activities that are unified companywide.

\* See page 19 for a list of the Environmental Management Systems (ISO 14001) certifications.

#### Targets and Actual Results

Item	Scope	Goals for achievement	FY2010			FY2011 target	Page ref.
			Target	Actual results	Evaluation		
Global warming prevention	Kuraray sites	10% reduction cf. FY1990 levels by FY2010 (Emissions: 1,226,000 t-CO <sub>2</sub> )	[Reduction through measures implemented in FY2010] 1.8% equivalent reduction (25,000 t-CO <sub>2</sub> ) cf. FY1990 levels	[Emissions] 11.8% reduction (1,201,000 t-CO <sub>2</sub> ) cf. FY1990 levels [Reduction through measures implemented in FY2010] 2.8% equivalent reduction (39,000 t-CO <sub>2</sub> ) cf. FY1990 levels	◎	[Emissions] 10% reduction (1,226,000 t-CO <sub>2</sub> ) cf. FY1990 levels [Reduction through measures to be implemented in FY2011] 2.2% equivalent reduction (30,000 t-CO <sub>2</sub> ) cf. FY1990 levels	P. 14-15
Reduction of chemical substance emissions	Domestic Kuraray Group companies	90% reduction cf. FY1999 levels	82% reduction cf. FY1999 levels	75% reduction cf. FY1999 levels	△	No target set for reduction of total emissions, because measures implemented so far have eliminated emission sources with a big environmental impact that needed urgent action; continued study and implementation of measures for effective reduction of emissions from individual sources	P. 15-16
		80% reduction cf. FY2004 levels by FY2010	All VOCs handled by Kuraray are chemical substances designated by JICA's PRTR, and approaches are taken as part of PRTR reduction efforts.	62% reduction cf. FY2004 levels	-		
Effective use of resources	Domestic Kuraray Group companies	Maintain the rate at 90% or over	Maintain the rate at 90% or over	96%	◎	Maintain the rate at 90% or over	
		-	[Reduction through measures implemented in FY2010] 1% equivalent reduction (690 t) cf. FY2009 levels	[Amount of waste produced] 75,000 t [Reduction through measures implemented in FY2010] 3.8% equivalent reduction (2,644 t) cf. FY2009 levels	◎	[Reduction measures to be implemented in FY2011] 1% equivalent reduction (745 t) cf. FY2010 levels	P. 16-17

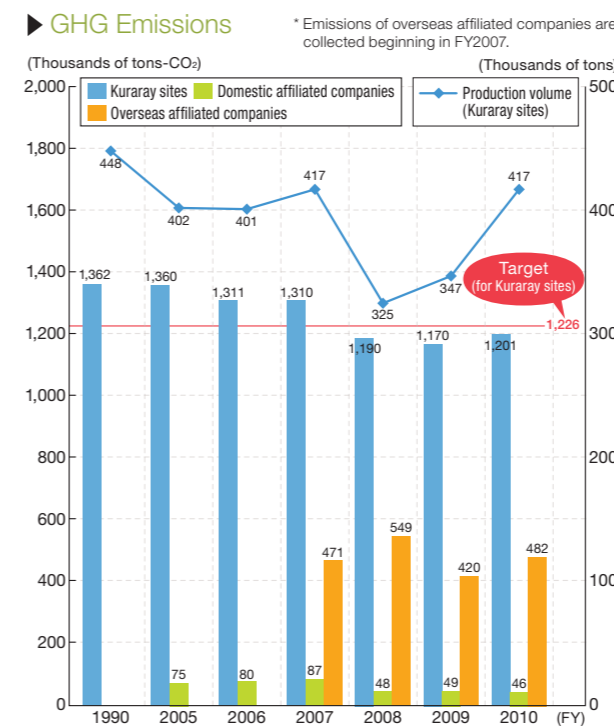
Evaluation ◎ : achieved ○ : largely achieved △ : further effort required

### Reduction of GHG Emissions

In our Medium-Term Environmental Plan, we posted the target of curtailing GHG emissions (from Kuraray sites) to 1,226,000 tons (a reduction of 10% relative to fiscal 1990) in fiscal 2010. We actually exceeded this target two years earlier, in fiscal 2008. To continue meeting this target in fiscal 2009 and succeeding years, we decided to work to hold the increase in emissions accompanying expansion of our business to the minimum, and have been taking approaches mainly on the following fronts: 1) promotion of energy conservation, 2) switch to clean fuel, and 3) introduction of new energy.

In fiscal 2010, GHG emissions from Kuraray sites came to 1,201,000 tons. This was 11.8% less than in fiscal 1990 and bettered the medium-term target of 10% again, as in fiscal 2009.

All of our plants have organized subcommittees especially for the purpose of reducing GHG emissions and launched into related activities. In fiscal 2010, steps including increases in the efficiency of energy utilization, improvement of yield, and revisions of production processes had the effect of reducing emissions by 39,000 tons. Nevertheless, the total increase in the production volume pushed emissions up by 31,000 tons from fiscal 2009.



\* Calculating the amount of CO<sub>2</sub> emissions deriving from the electrical power purchased by domestic Kuraray Group companies based on the adjusted emission coefficient beginning in FY2009 report.  
\* Excluding CO<sub>2</sub> emissions deriving from production of activated carbon from coconut husks at domestic affiliated companies beginning in FY2008 report.

GHG emissions from affiliated firms came to 46,000 tons inside Japan and 482,000 tons outside Japan. Those from the entire Kuraray Group in fiscal 2010 totaled 1,729,000 tons (up 90,000 tons from fiscal 2009).

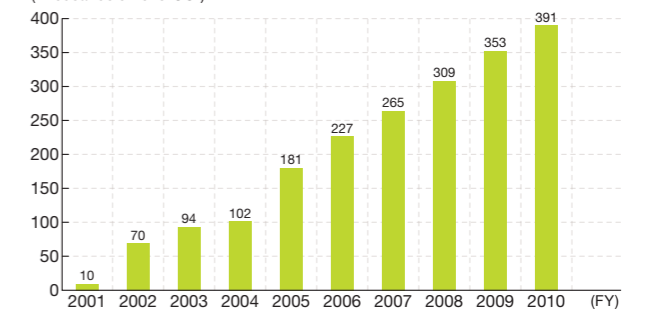
#### Trend in Measures for GHG Reduction

At Kuraray, we are striving to save energy by rationalizing processes, revising operating conditions, and introducing energy-saving equipment in our production activities. At the same time, for our in-house facilities for generation of power and steam, we are making a shift in fuels from heavy oil to natural gas, introducing biomass power generation, and installing photovoltaic power generation systems. These and other measures succeeded in reducing our GHG emissions by 391,000 tons (equivalent to 28.7% of the amount in fiscal 1990) over the ten years fiscal 2001-2010.

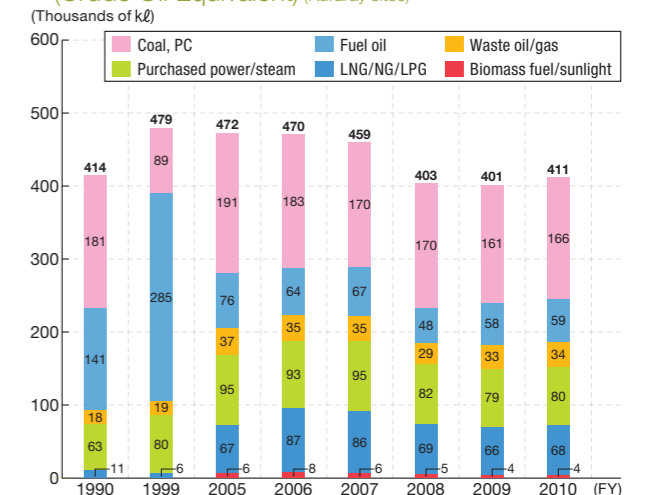
In fiscal 2011, we plan to introduce energy-saving equipment, improve manufacturing processes, and take other measures with the effect of reducing these emissions by about 30,000 tons.

As for our medium-term targets for the period beginning in fiscal 2011, in addition to reducing emissions accompanying our production activities as far as possible, we consider it important to make a contribution to reducing GHG emissions worldwide through provision of high-performance materials needed for building low-carbon societies, in keeping with our character as a manufacturer of unique chemical materials. We are therefore pursuing studies aimed at setting targets that enable reflection of contribution in terms of the entire product life cycle.

#### Cumulative GHG Emission Reductions (Kuraray sites)



#### Breakdown of Energy Use by Type (Crude Oil Equivalent) (Kuraray sites)





## Reduction of Environmental Burden during Transportation

The amended Act on the Rational Use of Energy contains the target of reducing the prime units of energy utilization\* by an average of more than 1% per year. To attain this target, Kuraray is taking various steps for more efficient transportation, including modal shifts\*. In fiscal 2010, our CO<sub>2</sub> emissions came to 12,300 tons, up 1,100 tons from fiscal 2009, owing to an increase in our sales. In terms of prime unit of energy utilization, however, we achieved a decrease averaging 3.5% annually (relative to fiscal 2006) over the four-year period beginning in fiscal 2007.

### Prime unit of energy utilization

An indicator for the improvement in energy utilization in reports to the Ministry of Economy, Trade and Industry, which is obtained by dividing the amount of energy used by the value closely related to the amount of energy used (sales in Kuraray's case).

### Modal shift

Switching mode of transportation from trucks to rail and sea transport which place less burden on the environment.

## Educational Activities

Besides working to reduce GHG emissions in their production activities, all Kuraray sites are engaged in educational programs for employees and their families. They encourage them to practice environmental accounting in the home and invite them to take part in various environmental activities.

In fiscal 2010, our Kashima Plant entered the Eco Drive Contest held by the Ministry of the Environment and other organizations, and was awarded the Eco Drive Activity Prize for its activities, which include a switch to hybrid vehicles for its company cars, posting of fuel graphs on these cars, showing of eco-drive movies, and other action to spur the spread of eco-driving.



Certificate of commendation from the Eco Drive Contest

## Reduction of Chemical Substance Emissions

Kuraray has posted the goal of reducing emissions of PRTR\*-designated substances by domestic Kuraray Group companies by 90% (3,991 tons) relative to fiscal 1999.

Thus far, we have focused on sources of emissions that are high and thought to exert a strong impact on the environment, and took measures such as blocking the sources, rendering the emissions harmless through combustion, and eliminating use of organic solvents in manufacturing processes. As a result, by fiscal 2010, we had cut these emissions by 75% (3,313 tons) relative to fiscal 1999, but this was short of the initially targeted 90%.

We made a voluntary assessment of environmental impact inside and outside our sites due to emissions of chemical substances at present. This assessment found that there were no emission sources requiring emergency response, and that the remaining ones were generally scattered and had low emission levels, which meant that further reduction faced technical and economic difficulties. We consequently decided not to set a target for the total emission level, and instead to continue with studies aimed at finding efficient reduction measures for individual sources while curtailing any additional emissions due to installation of new or expansion of existing facilities.

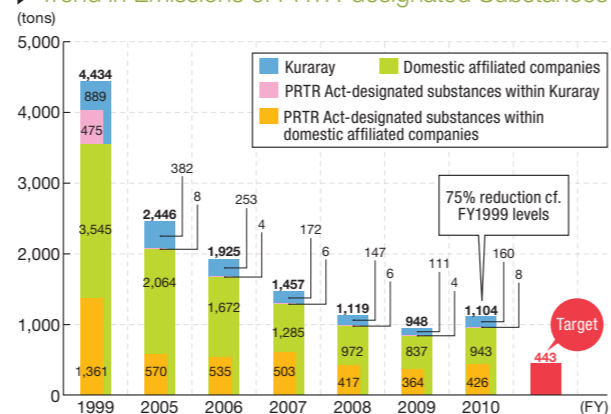
### PRTR

This program involves accurate assessment of the quantities of PRTR-designated substances emitted, and making voluntary efforts to reduce them. Kuraray has participated in Japan Chemical Industry Association (JCIA) program in this area before the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act) was enacted. Through the JCIA's PRTR program, 434 chemical substances have been targeted (328 of which are designated by the PRTR Act), and the domestic Kuraray Group companies handle 74 of these chemicals, including 56 chemical substances designated by the PRTR Act.

## Reduction of VOC

The provisions for curtailment of VOC\* emissions in the Air Pollution Control Act target a 30-percent reduction relative to fiscal 2000 in emissions from specified sources by fiscal 2010. All of the VOCs handled by domestic sites in the Kuraray Group are on the list of PRTR-designated substances. We therefore set the ambitious target of reducing VOC emissions by 80% relative to fiscal 2004 and took action to this end in the context of our activities to reduce emissions of PRTR-designated substances. In fiscal 2010, our VOC emissions amounted to 859 tons (62% less than in fiscal 2004). Although we failed to reach our voluntary target, we reduced emissions by

### Trend in Emissions of PRTR-designated Substances

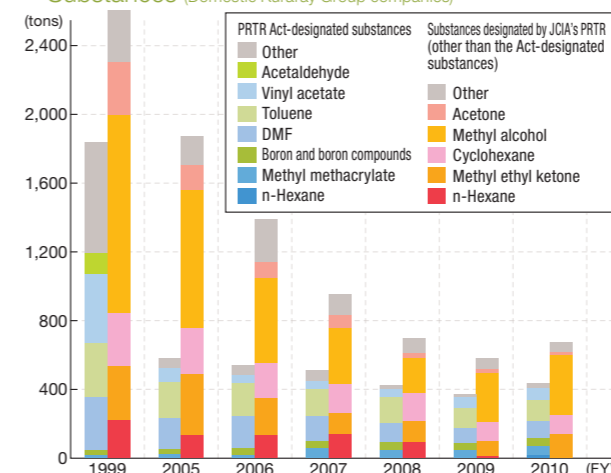


### Volatile Organic Compounds (VOC)

Organic chemicals volatile in the atmosphere at normal temperature and pressure are known collectively as VOC. If VOC is released into water or the atmosphere, environmental pollution or health hazard may occur.

69% relative to fiscal 2000, far above the target in the aforementioned Act.

### Breakdown of Emissions of PRTR-designated Substances (Domestic Kuraray Group companies)



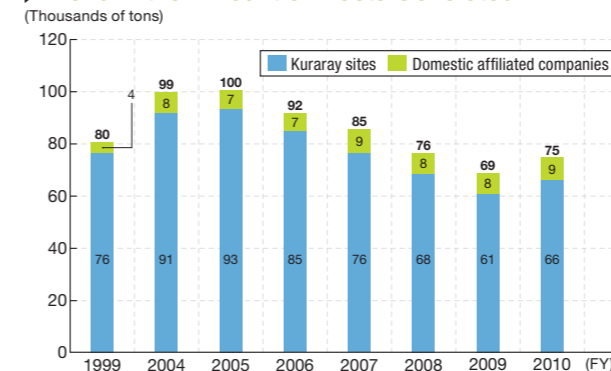
\* n-Hexane was designated in the PRTR Act in fiscal 2010.

## Effective Use of Resources

In fiscal 2007, the domestic Kuraray Group companies achieved an industrial waste utilization rate of more than 90% and held the final landfill disposal rate below 1% as targeted in the Medium-Term Environmental Plan. At present, they are striving to reduce the very levels of waste derivation in addition to promoting recycling.

The derivation levels per se are strongly influenced by the production volume. Focusing on the amount of decrease by derivation-reducing measures, we set the target of reducing derivation in fiscal 2010 by an amount equivalent to 1% or more of the amount derived in fiscal 2009. Each site took measures including the revision of conditions applied in operation of production facilities and decrease in brand switchover loss through rationalization of production schedules. As a result, the domestic Kuraray Group companies reduced waste derivation by 2,644 tons (3.8% relative to the fiscal 2009 level), and therefore attained the target. Nevertheless, the production increase pushed the total waste derivation amount to 75,000 tons, up 6,000 tons from fiscal 2009.

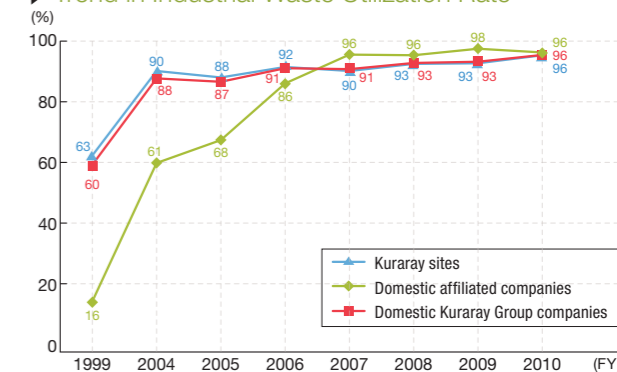
### Trend in the Amount of Waste Generated



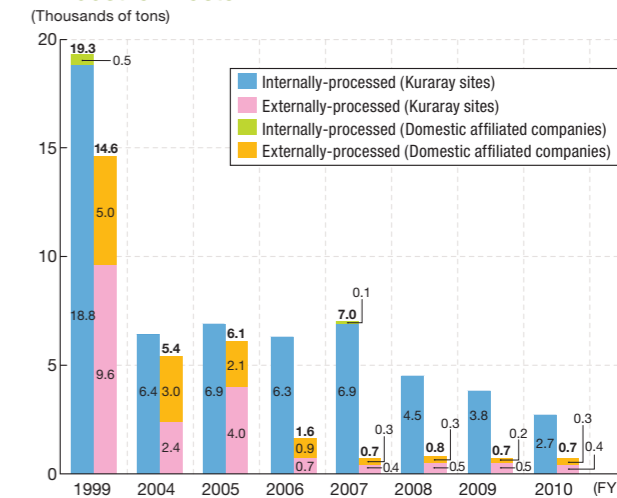
## Reduction of Soot and Dust Emissions

The Kuraray Group is also working to reduce emissions of SO<sub>x</sub>, NO<sub>x</sub>, and soot and dust. The Tsurumi Plant of Kuraray Chemical has many smoke- and soot-emitting facilities that are regulated by the Air Pollution Control Act. Besides observing the limits set down in laws and regulations for soot and dust emissions, the plant posted the voluntary target of reducing the emission level by about 90% (78 tons) relative to fiscal 2008, through an effort beginning in fiscal 2010 and extending to facilities not covered by the law. To this end, it is reinforcing the capacity of emission gas incinerators and dust removal facilities. It expects to attain the target upon the completion of its second phase of measures planned for fiscal 2011.

### Trend in Industrial Waste Utilization Rate



### Trend in the Amount of Unutilized Processed Industrial Waste



## Treatment of PCB Waste

The Kuraray Group practices proper storage and management of PCB\* waste and waste containing a small amount of PCB (trace-PCB waste) in accordance with the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes. We are also implementing treatment to render PCB stores harmless, in line with laws and regulations. In fiscal 2011, we began to measure PCB concentrations in electrical equipment that could possibly constitute trace-PCB waste.

### Polychlorinated biphenyl (PCB)

A chemically synthesized organic chlorinated compound once used in various applications, including insulating oil for electrical equipment and thermal media for heat exchangers. Because of its toxicity, its manufacture and import have been prohibited since 2001. Business operators with stores of PCB waste are required to render them harmless by 2016. In addition, in 2002, it was found that some electrical equipment considered not to use PCB actually contained insulating oil contaminated with traces of PCB. Business operators are consequently required to render such equipment harmless, like PCB waste, by 2016.

## Improper Disposal of Trace-PCB Waste

In fiscal 2010, our Kurashiki Plant discovered that we had mistakenly discarded one piece of electrical equipment that had used insulating oil containing traces of PCB in February 2008. The Plant immediately notified the Kurashiki municipal authorities and disclosed all pertinent information to them. The disposal was caused by an act mistaking equipment containing PCB, which should have been stored, for equipment not containing PCB. The insulating oil in the equipment had already been combusted in use as recycled fuel. It contained only a trace (about 0.5 grams) of PCB, and this is thought to have a negligible impact on the environment.

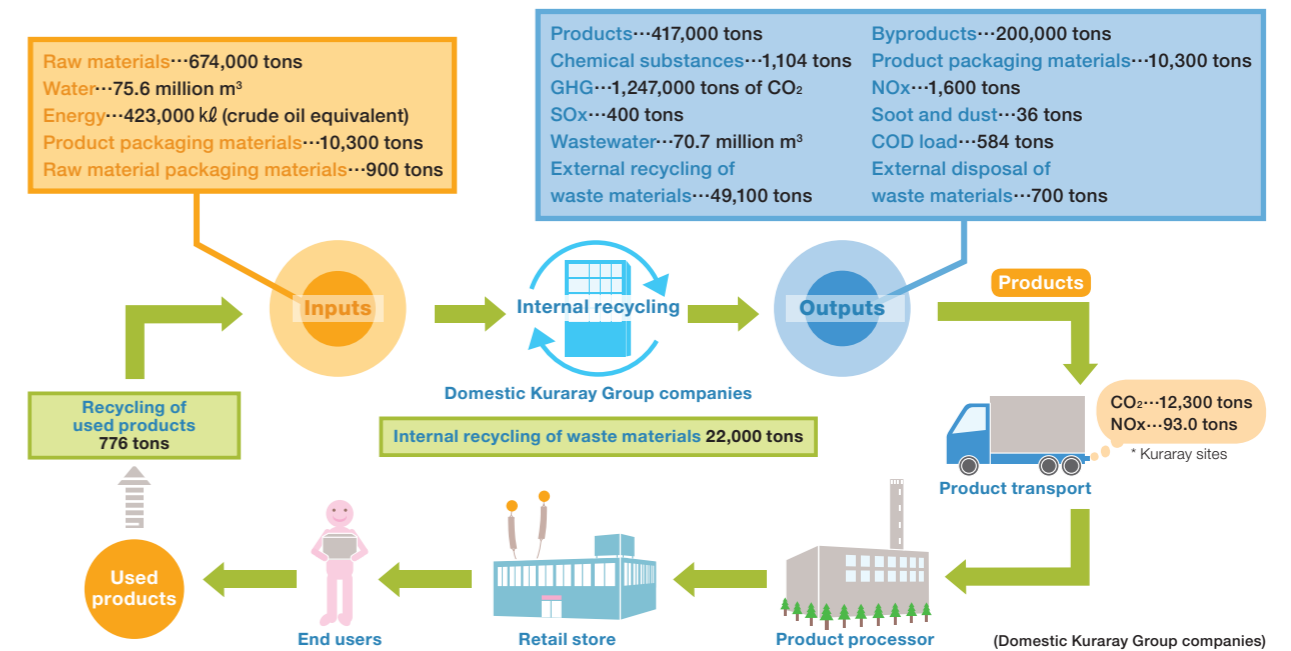
After this discovery, we rechecked all sites and confirmed that all trace-PCB waste was being properly managed.

From now on, we are going to further strengthen our control of trace-PCB waste and work to prevent the recurrence of any such accidents by educating employees.

## Material Flow in Business Activities (Fiscal 2010)

The Kuraray Group uses a great deal of energy, chemical substances, and water resources in the course of our business activities. We make quantitative surveys of

resources used and substances emitted, and use this information to minimize the environmental load associated with our business activities.



## Products Contributing to Improvement of the Global Environment

Besides striving to alleviate the environmental burden accompanying our business activities, the Kuraray Group is developing and manufacturing environmentally friendly products harnessing the technical expertise of our chemical manufacturers to contribute to improvement of the global environment.

### Abrasive Grain/Coolant Recycling System

In the context of its aqua business, Kuraray developed, and has begun supplying to customers a system for recycling of abrasive grain\* and coolant\* used when cutting silicon in manufacturing processes for products such as solar cells. The system is a sophisticated fusion of Kuraray's original high-performance membrane filtration technology and special centrifugal separation technology. It retrieves liquid coolant and solid grain with a high efficiency to permit their reuse. Because it also efficiently separates out and retrieves silicon powder from cutting processes, it additionally enables reuse of this powder to make silicon articles.

#### Abrasive grain

A collective term for granular or powdered substances with a high hardness, used in grinding and polishing.

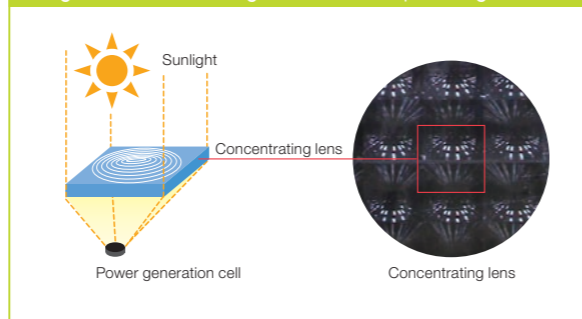
#### Coolant

Liquids used to cool objects containing heat; they are also used to cool heat generated during cutting and grinding.

### Concentrating Lens for Solar Power Generation

As one of its approaches in the field of new energy, Kuraray developed, and has begun supplying to customers, concentrating lens that serves as a key component of solar power concentrating photovoltaic systems\*. Applying our original precision molding technology, the lenses feature high transcription properties. Each one realizes a high degree of precision and light-concentrating efficiency. Moreover, improvement of methacrylic resin, one of Kuraray's raw materials, endows the lenses with excellent characteristics in respect of resistance to light and weather.

#### Image of concentrating lens for solar power generation



#### Solar power concentrating photovoltaic systems

Systems that concentrate sunlight with lenses (or mirrors) to irradiate small-area power generation cells. They enable an efficient and low-cost generation of power by allowing use of high-performance, high-cost cells with smaller areas.

## Environmental Accounting

### Environmental Preservation Costs (million yen)

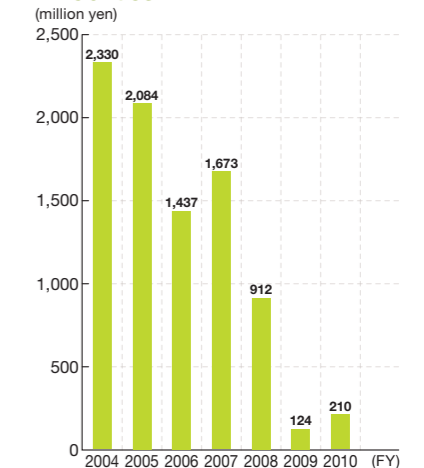
Category	Investments	Cost	Principal activities	
Costs within the sites	Pollution prevention costs	88	1,017	Operating cost of environmental facilities, measures to prevent emissions of chemical substances
	Global environmental preservation costs	50	199	Enhancement of in-house reuse of PC ash as a fuel
	Resource recycling costs	72	705	Enhancement of transformation of production process scrap back into a resource and in-house reuse of PC ash as a fuel
<b>Total</b>	<b>210</b>	<b>1,921</b>		
Upstream and downstream costs	-	121	Recycling and reuse of packaging materials, improvement of container packaging	
Administrative costs	-	101	ISO 14001, environmental measurement, environmental education	
Research and development costs	-	119	Development of environmentally friendly products	
Social activity costs	-	0	Afforestation, beautification, provision of environmental information to host community residents	
Environmental damage costs	-	0		
<b>Total</b>	<b>210</b>	<b>2,262</b>		

● Total investment during the reporting period: 12.3 billion yen (totalled in accordance with the scope of environmental accounting)  
 ● Total R&D costs during the reporting period: 14.1 billion yen (same as above)

### Environmental Preservation Effects

Category	Unit	FY2009	FY2010	Variance	
Pollution prevention effect	SOx emissions	tons	295	430	135
	NOx emissions	tons	1,507	1,528	21
	Soot and dust emissions	tons	29	27	-2
Global environment preservation activities	Emissions of PRTR Act-designated substances	tons	837	943	106
	COD load	tons	589	583	-6
	GHG emissions	1,000 tons of CO₂	1,170	1,201	31
Resource recycling activities	Energy consumption	1,000 kL (crude oil equivalent)	395	408	13
	Unutilized externally-processed industrial waste	tons	503	422	-81
	Industrial waste utilization rate	%	93	96	3
	Water resource use	million m³	71	75	4
Total emission of wastewater	million m³	68	70	2	

### Investment in Environmental Facilities



① Basis for environmental accounting calculations  
 ● Reporting period: April 1, 2010 to March 31, 2011  
 ● Scope covered: Kuraray Co., Ltd.  
 ② Environmental preservation cost calculation criteria  
 ● Depreciation: Straight-line method  
 ● Standard for allocating costs: In principle 100% of costs are allocated to individual environmental preservation items. However, a portion of costs is allocated on a pro rata basis.  
 ③ Standard for calculating environmental preservation effects  
 ● Effects are calculated in a simple comparison with the total environmental load of the previous fiscal year and are not adjusted for production volume.  
 ④ Standard for calculating economic effects (benefits) of environmental preservation measures  
 ● Although material effects such as income from recycling are known, benefits are deducted from environmental preservation costs.

# Approaches with the Community

## Social

We in the Kuraray Group consider the sound and sustainable advancement of society a precondition for corporate growth and prosperity, and the ultimate objective of corporate activities. It goes without saying that we see it as our duty to contribute to society through provision of products and services of genuine value to people. Beyond this, we consider assistance with resolution of social issues within a proper scope to be another requisite form of social contribution in our capacity as a corporate citizen.

## Activities of Social Contribution

The Kuraray Group applies its ingenuity and initiative in promoting activities of social contribution on an ongoing basis in the fields of education, medical and welfare, which require improvement of social infrastructure. We also support volunteer work by our employees toward the goal of harmony with local communities.

### Chemistry Classes for Boys and Girls Held

Plant	Class name	No. of classes to date	No. of participants to date
Kurashiki Plant	Fun Chemistry House	57	1,627
Saijo Plant	Exciting Chemistry Class	53	1,566
Okayama Plant	Fun Chemistry Class	32	1,098
Niigata Plant	Wondrous Laboratory	41	1,328
Kashima Plant	Fun Chemistry Class	9	672
<b>Total</b>		<b>192</b>	<b>6,291</b>

### Chemistry Classes for Boys and Girls

Since 1992 Kuraray has conducted the Chemistry Classes for Boys and Girls program with the goal of enabling elementary school students to experience the fun of chemistry through experiments by themselves.

Kuraray employees volunteer to serve as instructors or assistants to conduct classes at special classrooms on plant premises and at local elementary schools and public facilities. A total of 282 children participated on ten occasions in fiscal 2010.

In Singapore as well, Kuraray Asia Pacific Pte. Ltd. invited junior high schoolers to tour its plant and experience chemical experiments by themselves.

Since 2002, we have been exhibiting at Dream Chemistry-21, a chemistry experiment show held during summer vacation by the Japan Chemical Industry Association. In fiscal 2010, our experiment for production of aromatics using highly water-absorbent resin attracted the participation of about 1,200 children and their parents.



Exciting Chemistry Class (Saijo Plant)



Learning at Kuraray Asia Pacific Pte. Ltd. (Singapore)

### Sending School Bags across the Sea

Sending School Bags across the Sea is an annual program of international cooperation under which we send school bags once used by Japanese elementary school students along with school supplies and letters to children in Afghanistan and other countries where wartime devastation has robbed children of schooling opportunities.

The year 2010 marked the seventh year since the start of the program in 2004. The program has been steadily expanding and we collected some 9,000 school bags from all parts of the country in 2010. Filled with the good wishes of the children, the bags are sorted and packed by the members of the JOICFP (Japanese Organization for International Cooperation in Family Planning) and other concerned groups as well as Kuraray Group employees, before being sent overseas with the cooperation of many other volunteers. This year, too, we delivered the bags to children in need of them in Afghanistan and other countries.

In efforts to widen the scope of our activities, we continued to participate in the Himalaya Project held at Akita Prefectural University to bring electric lights to elementary schools in Himalayan villages. Through this project, we presented school bags and stationery supplies to Nepalese children.



Children in Afghanistan (photo provided by JOICFP)

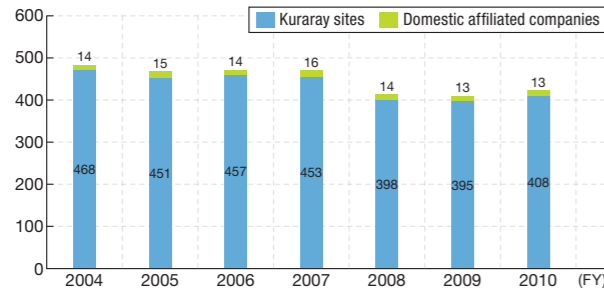


Children in Nepal (photo provided by the Akita Prefectural University Himalaya Project)

## Environmental Data

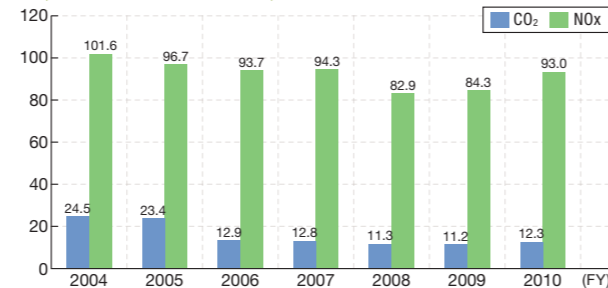
### Trends in Energy Consumption

#### Energy Consumption (1,000 kL crude oil equivalent)



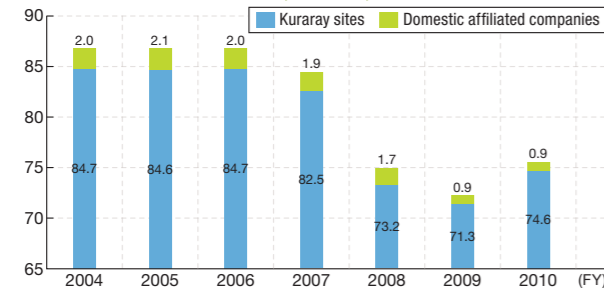
### Reducing the Environmental Burden during Transportation (Kuraray sites)

#### CO<sub>2</sub> and NO<sub>x</sub> Emissions during Transportation (CO<sub>2</sub>: 1,000 tons/NO<sub>x</sub>: tons)

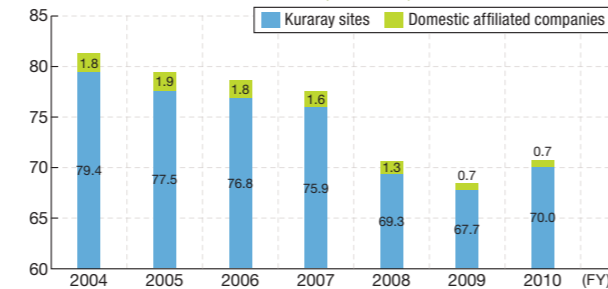


### Resource Conservation

#### Water Resource Use (million m<sup>3</sup>)

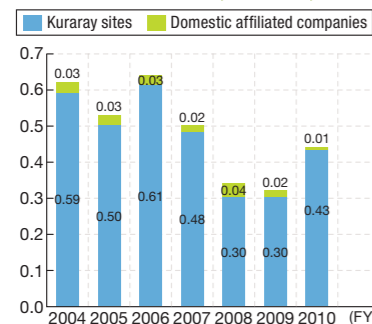


#### Emission of Wastewater (million m<sup>3</sup>)

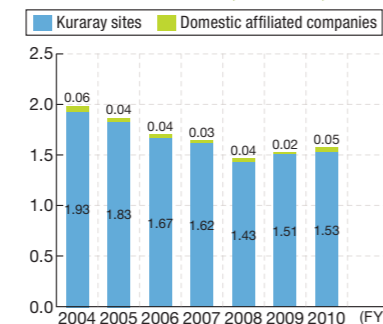


### Air Pollution Prevention

#### SO<sub>x</sub> Emissions (1,000 tons)

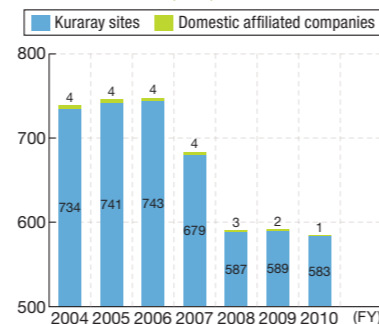


#### NO<sub>x</sub> Emissions (1,000 tons)



### Water Pollution Prevention

#### COD Load (tons)



## Environmental Management System (ISO 14001) Certifications

- Kuraray Niigata Plant
- Kuraray Okayama Plant
- Kuraray Kashima Plant
- Kuraray Kurashiki Plant (including the Kurashiki Research Center)
- Kuraray Tsukuba Research Center
- Kuraray Saijo Plant
- Kuraray Chemical Co., Ltd. (Tsurumi Plant)
- Kuraray Plastics Co., Ltd. (Ibuki Plant)
- Kuraray Fastening Co., Ltd. (Maruoka Plant)
- Kuraray Trading Co., Ltd. (Headquarters Osaka, Tokyo)
- Kuraray America, Inc. (EVAL BU, SEPTON BU)
- EVAL Europe N.V.
- Kuraray Europe GmbH (PVA/PVB Division, Trosifol Division)
- OOO TROSIFOL
- Kuraray Asia Pacific Pte. Ltd.

Note: The following affiliated companies occupying the same premises as Kuraray plants are included. Kuraray Kuraflex Co., Ltd., Kuraray Okayama Spinning Co., Ltd., Kuraray Medical Inc., Kuraray Tamashima Co., Ltd., Kuraray Saijo Co., Ltd., Kuraray Engineering Co., Ltd., Kuraray Techno Co., Ltd., Kyosei Chemical Co., Ltd.

## Support for Self-help Efforts of the Mentally Challenged

To help the challenged lead self-supporting lives by providing them with opportunities for employment, Kuraray sets up workplaces especially for the mentally challenged in coordination with local welfare facilities.

The Kuraray Workshop at the Niigata Plant opened its doors as a place of work for the mentally challenged in 1997, with the cooperation of Nakajo town (the current city of Tainai) and the social welfare institution Nanahokai "Niji-noie". Employees at the workshop perform sorting for recycling of scraps derived in production processes and produce articles. At the Himawari Workshop, which opened on the grounds of the Saijo Plant in 2007, employees engage in recovery and weighing work required for recycling of leftover fiber derived in production processes.

In February 2011 as well, we opened Aozora Works at our Kashima Plant with the help of the social welfare institution Kamisu Keiai-en. The workers there have begun making bags for packaging liquid-state resin.

With the inclusion of those engaged in the tasks of cleaning work garments and affixing labels to dental materials at our Kurashiki Plant, we employ eight instructors and 34 workers at a total of four locations.



The work room in Aozora Works

Employees making bags for packaging liquid-state resin

## Support for Medical and Welfare Facilities

Magosaburo Ohara, our founder, also helped to pioneer philanthropy in Japan, and was involved in the establishment of numerous medical, welfare, and cultural/research facilities. As part of its activities of social contribution, Kuraray continues to offer support in the management aspect to the Ishii Memorial Aizen-en, Ohara Museum of

Art, Kurashiki Central Hospital, and Doushinkai Saijo Central Hospital. In addition, we operate a nursing facility for the aged utilizing welfare facilities in our plants.



Ohara Museum of Art

Aizenbashi Hospital



Kurashiki Central Hospital

Saijo Central Hospital

## Relief and Assistance in Response to the Disaster

In response to the Great East Japan Earthquake, the Kuraray Group donated 100 million yen to those victimized by the disaster and the affected areas. As material aid, we also donated Kuraray products of various types, including sanitary masks and cloths, sterilized wipers, and bandages. Meanwhile, all of our sites collected donations from employees mainly through the Kuraray Fureai Fund\*, and member companies both inside and outside Japan matched them with gifts of their own. As this indicates, our Group provided relief and assistance for the affected areas in various forms.

In addition, our Niigata Plant opened employee housing to evacuees from the affected areas and supported their residence in them.

### Kuraray Fureai Fund

We set up Kuraray Fureai Fund in July 1992. Under this fund, companies make donations consisting of the donations made by their employees plus a matching gift of the same amount. Employees endorsing the Fund agree to donate amounts of less than 100 yen from their salaries to it, and the company matches this amount. The funds collected in this way are used for purchase of items for donation to social welfare organizations or other such parties, for contribution to the good of society.

## Interchange with Local Residents

Our Saijo and Niigata plants each stage a Cherry Blossom Viewing Party when the cherry trees on their grounds have flowered. In fiscal 2010, a combined approximately 9,000 people visited their grounds to admire the trees in full bloom. In December, our Kurashiki Plant opened its gates to local residents for the staging of a Christmas Fantasy event whose centerpiece is a Himalayan cedar decorated and illuminated like a Christmas tree.



Christmas Fantasy Event at Kurashiki Plant

Cherry Blossom Viewing Party at Niigata Plant

## CSR Procurement

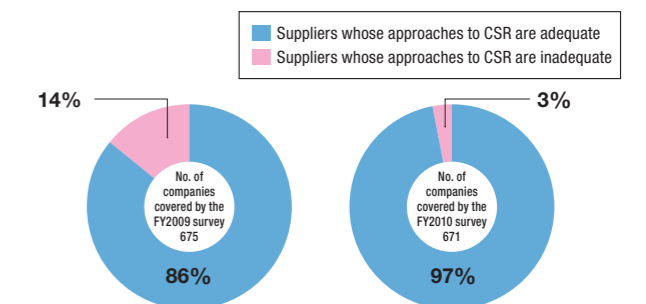
Kuraray established the Green Procurement Policy in fiscal 2001. As the next stage of our green procurement efforts, we also established the CSR Procurement Policy in fiscal 2005 in order to make our purchasing activity more impartial, fair, and transparent. Based on the Ten Principles of the United Nations Global Compact, which is an international statement of universal principles, the CSR Procurement Policy consists of eleven items in three fields. With the cooperation of our major suppliers, we have been further enhancing our CSR procurement activity.

2010 survey to take more aggressive action. As a result, approaches were found to be adequate at 73 of these firms and still inadequate at 20. Of the 671 suppliers covered by the survey, approaches are now deemed adequate at 97%. We are going to continue asking these suppliers to enhance their efforts for CSR procurement.

### Criterion for determining adequacy of CSR activities

Implementation of eight or more items out of the eleven items set forth in the CSR Procurement Policy

### Results of the CSR Survey



### CSR Procurement Policy

#### Respect for human rights

- ① Respect for human rights and individuality
- ② Observance of the International Labor Organization's core labor standards
  - Guarantee of freedom of association and the right of collective bargaining
  - Prohibition of compulsory labor
  - Prohibition of child labor

#### Compliance

- Compliance policy
- Compliance education program
- Compliance systems

#### Promotion of green procurement

- Preparation of environmental policies and environmental reports
- Green procurement implementation plan and implementation apparatus
- ISO 14001 certification
- Education and awareness campaign for green procurement

## Status of Activities

We requested a total of 97 suppliers whose approaches to CSR procurement were deemed inadequate in the fiscal

## Green Purchasing

As a part of its CSR procurement activities, Kuraray preferentially purchases environmentally friendly (green) products in line with its Green Purchasing Guidelines, which was revised in fiscal 2009. We are going to continue working for a further increase in our green purchasing rate.

### Table of Green Purchasing Practices

Field	Item	Purchasing amount (millions of yen)	Green purchasing rate			
			FY2009	FY2010		
1	Paper (recycle)	3 items	Copier paper, printing paper, toilet paper	40	14%	16%
2	Stationery (recycle)	82 items	Mechanical pencils, ballpoint pens, magic markers, pencils, etc.	14	75%	60%
3	Office supplies (reuse)	10 items	Chairs, desks, shelves, umbrella stands, storage items, bulletin boards, low partitions, coat hangers, blackboards, white boards	10	100%	86%
4	OA equipment (energy conservation)	4 items	Personal computers, printers, copiers, fax machines	72 (leasing fee)	100%	100%
5	Home electrical appliances (energy conservation)	2 items	Refrigerators, TVs	2	92%	93%
6	Lighting (energy conservation)	2 items	Fluorescent lamps, bulb-type lamps	3	81%	69%
7	Automobiles (reduced environmental pollution)	1 item	Automobiles	47 (leasing fee)	100%	96%
8	Uniforms and work clothes (recycle)	2 items	Uniforms (for female employees at headquarters), work clothes	19	100%	100%
9	Fire extinguisher	1 item	Fire extinguisher	8	85%	81%

## Communication with the Regional Community

### Plant Tours and Briefing Sessions

Kuraray plants and the plants of Kuraray Plastics Co., Ltd. and Kuraray Chemical Co., Ltd. hold tours and regular briefing sessions for the purpose of communication with local residents. In fiscal 2010, such activities at seven Kuraray Group plants in Japan attracted an extended number of 2,979 participants, and served to deepen their understanding of activities at these sites.

### Major Activities at Kuraray Plants

Plant	Activities
Kurashiki Plant	Christmas Fantasy, Children's Ball Games Meet, Summer Festival, Ground Golf Tournament
Saijo Plant	Cherry Blossom Viewing Party, Kenaf Cultivation, Summer Festival
Niigata Plant	Cherry Blossom Viewing Party, Junior High School Soft Tennis Tournament, Summer Festival
Okayama Plant	Volleyball for Moms Meet, Children's Ball Games Meet, Summer Festival, Kuraray Okayama Festival
Kashima Plant	Volleyball for Moms Meet
Kuraray Chemical Co., Ltd.	Summer Festival
Kuraray Plastics Co., Ltd.	Summer Festival

# Approaches in the Workplace

## Social

Through the Kuraray Group Global Human Resources (HR) Policy, Kuraray Group is making efforts to develop its organizational system regarding promotion of diversity, fostering of human resources, and fair and just evaluation of performances as well as establishing a healthy corporate culture and creating new employment opportunities, so that each employee can work in a way which leads to personal growth through the fulfillment of his or her duties.

### The Kuraray Group Global HR Policy

**1 We will respect the human rights of individuals.**

Based upon our Corporate Philosophy, "Respect for individuals", we will respect the individual character and the human rights of all people working in the Group. Any abuse of human rights, such as sexual harassment, bullying, child labor, forced labor and so on, should be eliminated.

**2 We will abolish discrimination and respect diversity and individuality.**

In all aspects of HR activities, including hiring, treatment, personnel development, assignment and evaluation, no distinction unrelated to work ability and performance, nor discrimination based upon individual attributes such as race, nationality, gender or beliefs, shall be allowed. We will esteem and promote diversity that accepts the personal traits, culture and worldview of people from various nations.

**3 We will carry out our HR activities in full compliance with applicable laws and regulations.**

We will strictly comply with applicable laws and regulations of each country in carrying out the implementation of personnel policies.

**4 We will create HR systems that uphold equality, fairness and transparency.**

In implementing our HR policies, we will give full consideration to equality, fairness and transparency, and will seek due satisfaction to all of the Group employees.

**5 We will strive to improve the environment of workplaces.**

From the perspective of occupational health and safety, we will strive to maintain working environments that enable people to work safely and with regard for their physical and mental health.

**6 We will strive to employ personnel who are able to contribute to the development of the Kuraray Group.**

We will employ people who are highly skilled and knowledgeable, and who possess a sound sense of morals and ethics, as well as the desire to make significant contributions to the development of the Kuraray Group.

**7 We will place the right person in the right job.**

We will place each individual in its right job, in due consideration of capabilities, knowledge, suitability and skill development, with an aim to maximizing operational contributions and job satisfaction.

**8 We will implement evaluation and benefits systems that are fairly satisfactory.**

We shall implement an evaluation and benefits systems that is fairly satisfactory to employees, with a focus on job description, exercise of potential, performance, attitude and action through dialogue with evaluations.

**9 We will support professional development.**

We will provide an appropriate level of support for job skill development with a focus on development through performance of individual works.

**10 We will foster communication and maintain appropriate levels of disclosure.**

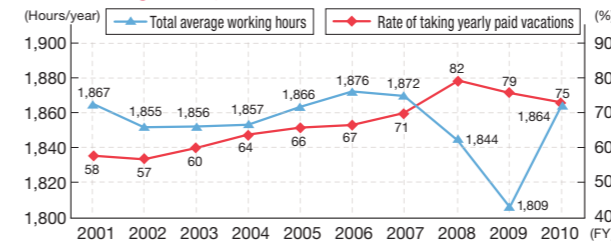
So that all Kuraray Group personnel may possess a sense of unity in working toward the fulfillment of a shared mission, we will provide appropriate levels of disclosure and conduct direct and indirect communications with them.

## Diversity and Work-Life Balance

### Employment Systems and Average Working Hours

Kuraray has instated systems for flexibility in employment. The main such systems enable discretionary labor systems for adaptation to the nature of individual work, the "de facto working hour" system for out-of-office works, and variational working hours. We also have no-overtime days and are striving to improve the rate of taking yearly paid vacations.

### Trend in Total Average Working Hours and Rate of Taking Yearly Paid Vacations (Kuraray)



\* Total average working hours for FY2009 and FY2010 reflect the impact of reduced operating rates due to the crisis induced by the failure of Lehman Brothers as well as reduced overtime work and rate of taking yearly paid vacations.

### Leave for Childcare and Nursing Care

Kuraray has introduced a system for support of childcare and nursing care by employees as infrastructure to support a good work-life balance.

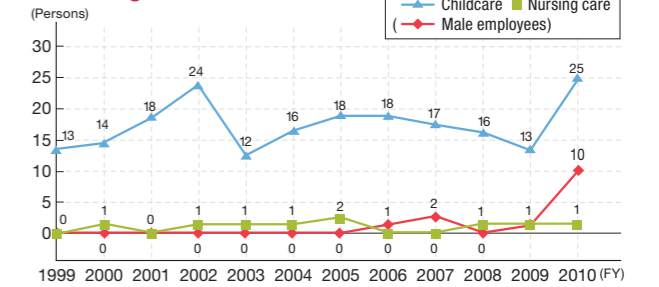
In consideration of the timing of admission into a day-care center, employees are allowed to take childcare leave either until the end of April in the year after the child turns one or until the child is one year and six months old, whichever is longer. In fiscal 2010, childcare leave was taken by 25 employees at Kuraray. We recommend male employees to take childcare leave to encourage more fathers to get involved in child rearing.

Employees can also use our reduced working hour system for childcare up to the point when the child finishes the third year of elementary school. Almost all of the female employees who gave birth avail themselves of these systems.

Provisions for leave and reduced working hours for nursing care up to one year each, for a total of two years maximum, are available to employees.

Kuraray was certified by the Minister of Health, Labour and Welfare upon achievement of its action plan in accordance with the Act on Advancement of Measures to Support Raising Next-Generation Children in March 2007 and March 2009. We are now working on the third-stage action plan for the period between fiscal 2009 and 2012.

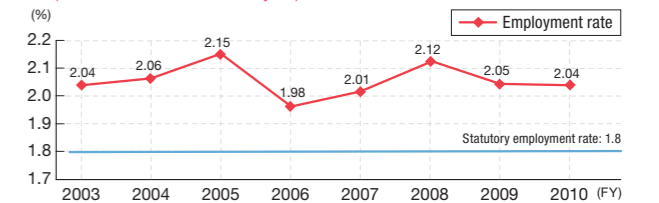
### Number of Employees Taking Leave for Childcare/ Nursing Care (Kuraray)



### Employment of the Challenged

Kuraray not only attains the statutory employment rate of 1.8% but also has taken other action to help the challenged lead self-supporting lives, such as the establishment of workplaces especially for the mentally challenged in coordination with local welfare facilities (see page 21).

### Rate of Employment of the Challenged (Kuraray) (as of the end of each fiscal year)



### Other Provisions

**(1) Support for Social Contribution**

Kuraray employees may use accumulated yearly paid vacations, which ordinarily lapses with the prescribed passage of time, as special vacations (up to 60 days a year) for social contribution activities. We have also made provisions for social contribution leave, and support diverse activities of this type by our employees. In fiscal 2010, five employees took special vacations to take part in volunteer activities for natural preservation or in other activities.

**(2) Refresh Vacations**

On the occasion of commendation for 25 years of continuous service, employees may choose to receive a travel coupon for an award. In this case, they may also take special vacations to go on a trip with this coupon. In fiscal 2010, 24 employees took such vacations.

**(3) Life Planning Support**

Kuraray offers employees life planning courses for each stage of life. We have also introduced web tools that are tailored to our wage and retirement benefit systems so that employees can simulate their future income and expenditure at home.

## Basic Employee Data

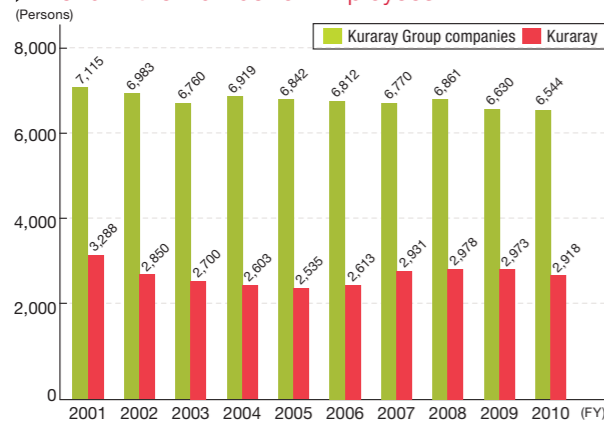
**Number of Employees**

As of March 31, 2011

	Total	Male	Female
Kuraray Group as a whole	6,544	5,547	997
Kuraray only	2,918	2,646	272

\*Group = consolidated subsidiaries

**Trend in the Number of Employees**



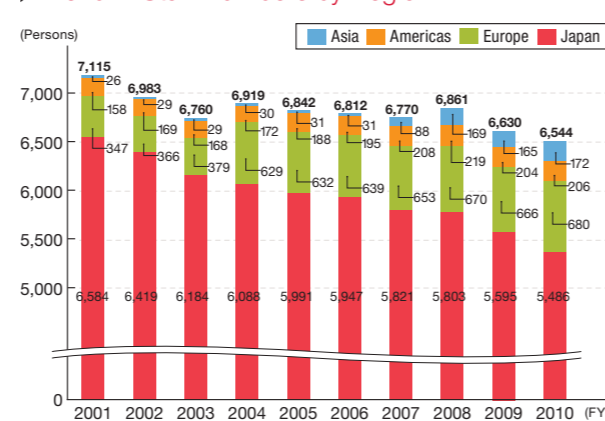
**Employee Turnover Rate**

Fiscal 2010

	No. of those leaving employment	Turnover rate
Personal reasons	15	0.5%
Retirement	33	1.1%

\* Turnover rate = Number of those leaving employment by cause / Number of Kuraray's employees at the beginning of the fiscal period

**Trend in Staff Numbers by Region**



## Human Resource Development and Assessment

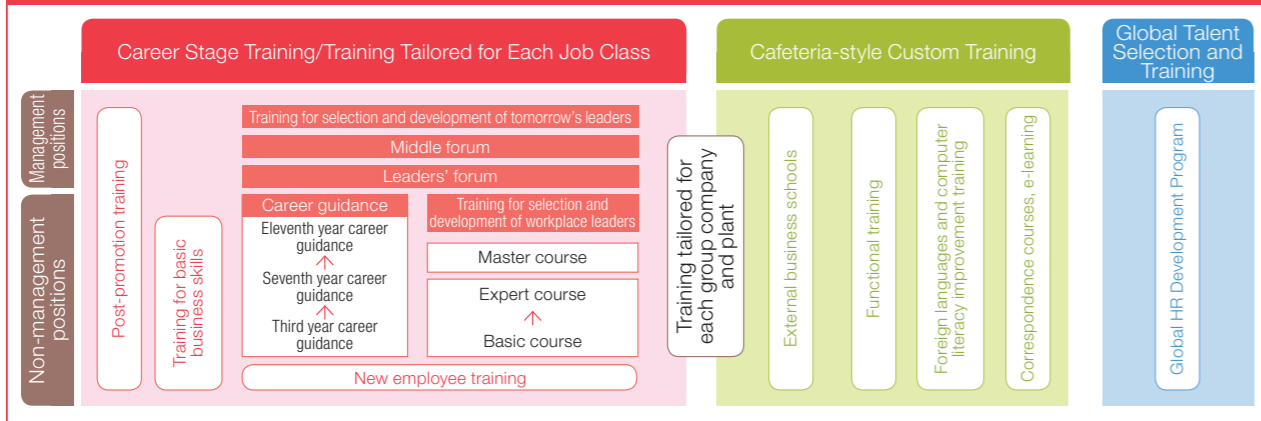
For the domestic Kuraray Group companies, we have established a companywide training scheme to support acquisition of the knowledge and skills required for jobs and career-building efforts by employees themselves.

The training is open not only to regular employees but also part-time and contract-based ones, as necessary. In addition, Kuraray plants and group companies plan and

implement their own training programs and provide their employees with finely-tuned support for skill development and career-building.

Kuraray also has an incentive system under which it furnishes grants for acquisition of certain public qualifications by employees for their own self-improvement.

### Kuraray Group Training Scheme



### Global HR Development Program

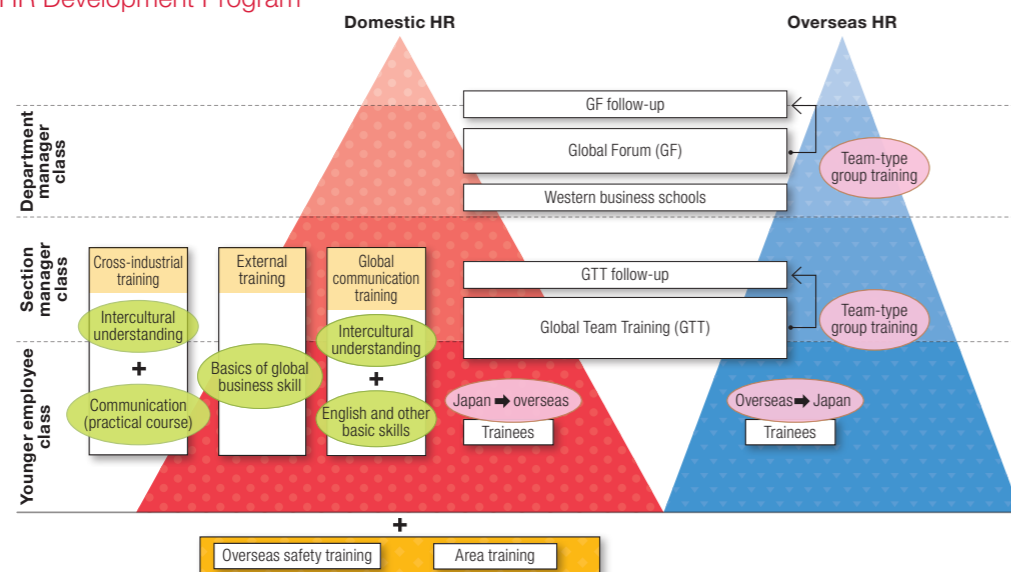
In fiscal 2007, we instated the Global HR Development Program for all employees of the Kuraray Group, including those outside Japan. The purpose of the Program is early development of personnel equipped for activity on a global scale.

Under the Program, we plan and execute a wide variety of activities, including the Global Forum (GF) and Global Team Training (GTT) for group training at overseas sites, the Western business school scheme offering open classes at business schools in other countries, trainee programs for

mutual dispatch of employees between group companies inside and outside Japan, and the external training scheme utilizing open courses at external institutions in Japan. Over the three-year period ending with fiscal 2009, the Program attracted about 110 participants in Japan and about 50 in other countries.

Since fiscal 2010, we have planned and executed other programs in addition to the existing ones. These include the global communication training revolving around language and intercultural training, cross-industrial training jointly conducted with other firms, and follow-up programs for graduates of GF and GTT.

#### Global HR Development Program



### A Fair, Impartial, and Transparent HR System

Kuraray has instated a personnel system in which elements such as improvement of job execution capabilities, performance, roles, and spirit to challenge demanding targets (as opposed to seniority and personal factors) are reflected in remuneration.

Specifically, we instated a scheme of role ranks for management positions, under which remuneration slides with the role and performance, and one of skill qualifications for ordinary employees, under which remuneration reflects the extent of skills and performance. Wages and bonuses are determined on the basis of these

## Occupational Health

To provide workplace environment where it is possible to work in both a physically and mentally safe and healthy manner, we formulated the Kuraray Basic Policy on Occupational Health.

### Kuraray Basic Policy on Occupational Health

In keeping with the Principles for Business Conduct, the Kuraray Group recognizes that ensuring the safety and health of employees and other stakeholders is the basis of a company's business activity. Kuraray maintains workplaces where people can work in health and safety and engages in health promotion activities.

### Mental Health

Kuraray has mounted a companywide approach to mental health measures aimed at preventing stress-related conditions that have been on the rise in society as a whole in recent years.

#### (1) Training for Prevention

With guidance from the Institute for Science of Labour, we continue to implement training for self-care (action taken by employees themselves) and line-care (action taken by managers and workplace leaders) with an awareness that the employees themselves as well as their superiors and personnel staff are the principals of initiatives to maintain mental health.

#### (2) Mental Health Counseling Office

Kuraray has established counseling offices both inside and outside the company, and prepared arrangements that make it easy for employees to get counseling over the phone or through face-to-face meetings. To prevent mental difficulties caused by long working hours, we have employees who work a lot of overtime receive a health examination by industrial physicians and health care staff.

schemes. We have also made arrangements for a change of education course to suit their desired career path.

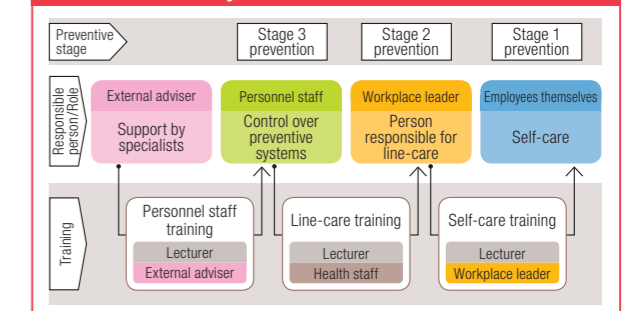
In the aspect of personnel evaluation, we instated a scheme of target-based management in which actual employee performance is rated with reference to targets for duties and skill development set through consultation with their superiors. We also provide ongoing training for personnel making the evaluations.

In addition, we periodically conduct surveys of employee awareness to ascertain how employees feel about their job and workplace, and what changes they would like to see. We use the findings for improvement of setups and the workplace environment.

#### (3) Assistance with Return to the Workplace

We instated a rehabilitative attendance system to support a phased return to the workplace by employees who have been off the job for a long time. In fiscal 2010, 16 employees made use of this system.

### Preventive System



### Support for Building Health

To promote the health of its employees, Kuraray is deploying a companywide program for improvement of life habits under the banner "Health Up Strategy". In this program, each employee sets his or her own goals (for amounts of exercise, eating, etc.) and works to attain them on his or her own initiative.

Other steps being taken to build health include improvement of the menu in the employee cafeteria, the holding of exercise events such as walks, and lectures on ways to prevent lower back pain.

In our employee health exams, besides testing for the items stipulated in the Industrial Safety and Health Act, we lowered the applicable age and added items in connection with measures against lifestyle disease and gynecological testing.

## Relations with Workers Unions

Employees of Kuraray belong to the Kuraray Workers Union and the Federation of Kuraray Workers Unions, which is composed of all workers unions for Kuraray Group employees. Through venues such as labor-management

councils and councils on occupational safety, we engage in earnest consultation with representatives of these unions on various issues and work for their resolution through mutual cooperation.

# Vynlon and Our CSR Philosophy

Kuraray was the first firm in the world to commercially manufacture vynlon\*, Japan's first domestically produced synthetic fiber. Last year, which marked the 60th anniversary of the start of our operations, vynlon was registered as a "Technological Legacy for the Future" by the National Museum of Nature and Science. The technologies spawned by vynlon and the development of business in poval, its base material, are major pillars supporting the business of today's Kuraray Group.

Along with vynlon, we have always cherished our management philosophy, whose kernel conviction is summed up in the words of Soichiro Ohara, our second president: "The profit that companies ought to gain must be that as compensation for benefit and contribution to society and the national economy through technical innovation."

\* Product name of vynlon in English is KURALON



Vynlon, the synthetic fiber registered as a "Technological Legacy for the Future"

## Commitment to Purely Domestic Production

In November 1950, Kuraray began to produce five tons of vynlon per day at its Okayama Plant. Commercial manufacture of vynlon grew out of a solid sense of mission on the part of Soichiro Ohara, who believed it would fire the spirits of the Japanese after their loss of confidence with their defeat in the war.

Around the same time, other Japanese firms began producing nylon with technology introduced from the United States, but vynlon was the focus of high hopes among the Japanese, for a different reason: in resource-poor Japan, it could be synthesized by means of limestone, electricity (hydropower), and air (oxygen), and was to be the first purely domestically produced type of fiber.



Soichiro escorting Prime Minister Shigeru Yoshida at the exhibit and sales show for vynlon weavings

In May 1949, Kuraray held an exhibit and sales show for vynlon, which was then in trial production, at Mitsukoshi's main store in Tokyo. The show was absolutely thronged, and underscored the magnitude of the reaction garnered by the product.

Nevertheless, production of vynlon required an immense investment of some 1.4 billion yen, far outweighing the 250 million yen which the Kuraray of that day had in capital. Unable to get the amount of financial aid it anticipated from the government in connection with policy for development of synthetic fiber industry, its procurement of the necessary funds reached an impasse. Soichiro decided to go directly to Mr. Hisato Ichimada, then the governor of the Bank of Japan, and sought his cooperation, pointing out that the business was not for the profit of a single company but for the recovery of Japan's textile industry as a whole. His enthusiasm led to the determination of joint financing of 1.4 billion yen by a consortium of 15 banks in October 1949.

This financing gave birth to vynlon, but the business was endangered for a while, partly due to problems such as a low amenability to dyeing, when the Japanese economy slumped once a truce was declared in the Korean War. Thereafter, however, Kuraray made repeated technical innovations and gradually built the business up while expanding the circle of applications to fishing nets, industrial materials, and school uniforms and other apparel.



An ad for a vynlon school uniform

## Plant Export to China

In this situation, a delegation from China's chemical industry arrived in Japan and expressed a desire to import a vynlon plant in order to increase production of synthetic fiber for consumer use. At the time, relations between Japan and China had not yet been normalized, and export of plant facilities to China was highly exceptional. Moreover, the prospect turned into a political issue, given Japan's friendly relations with Taiwan. Under these circumstances, Kuraray actively lobbied with the Japanese government, heads of political parties, and even Western-Bloc diplomatic circles. These efforts paid off in August 1963, when it obtained the Japanese government's approval for the export as trade based on the Japan-China LT Trade Memorandum (signed in November 1962 by Tatsunosuke Takasaki and Liao Chengzhi). This was the first plant export by a country in the Western Bloc to China.

For Kuraray, export of this plant was not merely an economic undertaking; it was also a case of management with awareness of social responsibility.



The poval plant (left) and vynlon plant (right) constructed in China

In an article published in the magazine "Sekai" ("The World"), Soichiro made the following statement.

"The poval and vynlon technologies are corporate assets created by the 10,000 employees working at Kurashiki Rayon, a single Japanese company, who toiled and sweated undaunted by the postwar hardships. As the manager of this company, I consequently have the duty to sell the fruits of these technologies for compensation in order to profit the company. Nevertheless, I have one fervent wish in this connection. While a daily production of 30 tons of vynlon translates into an annual supply averaging only 0.017 kilograms of fiber per capita of the population of some 650 million, it would still improve, even if slightly, the lives of the Chinese masses lamenting a lack of textiles. And I also hope it would be some reparation on behalf of the Japanese of the past, who wreaked such devastation and misery, in both the material and non-material aspects, in China during the war. My wish is nothing more than this."

## The Contribution of Vynlon

With the subsequent rise of the general-purpose fiber polyester, vynlon fell out of favor in the field of apparel. It nevertheless made inroads in applications making the most of the features of this original technology, including high levels of strength and modulus, hydrophile properties, and resistance to chemicals and weather. Kuraray promoted its use for items such as cheesecloth (a woven net-form material used in agriculture), nets for cultivation of laver, and other materials used in farming and fishing, as well as rope, sails, fire-fighting garments, and work garments. In more recent years, it developed additional applications for vynlon, chiefly in the field of industrial materials including separators for mercury-free alkali batteries and oil brake hoses in automobiles. Vynlon has also found an expanding demand as a reinforcing agent for cement, especially in Europe. It is helping to improve life for people around the world as an environmental material alternative to asbestos.



Roof slate made with vynlon-reinforced cement

The zeal which Soichiro felt about vynlon is at the foundation of Kuraray's CSR philosophy and business, and so is being carried on today.

## The Roots of Vynlon

Vynlon was born 60 years ago and is still one of our mainstay products. It has rapidly evolved to meet the needs of the times. When I reflect on why I am doing this work, it occurs to me how vital my role is. In short, by selling this product, I am assisting the advancement of Japanese industry, helping to preserve the environment, and contributing to the safety of consumers. I intend to use these three insights on our standpoint or role as guidelines to be applied in running the business into the future. Because it is a corporate activity, we naturally have to turn a profit. But I also am determined to be true to the spirit of "for society and for people". (Hitoshi Toyoura, General Manager of the Fibers and Industrial Materials Division)

## The Torch Kindled by Shiko Munakata's "Vynlon Shohanga Saku"

When the commercialization of vynlon was in its final stages, Soichiro made the following comment to woodcut artist Shiko Munakata: "I am staking our destiny on the vynlon business. We must get vynlon production on track, also to put the Japanese economy on independent footing. I need a guiding torch for this challenge. I wonder if you could express these aspirations of mine for vynlon in woodcuts?" At the time, Japan was right in the middle of an economic slump triggered by the so-called "Dodge Line", and Soichiro was having trouble managing the company. He sought the encouragement needed to break through the difficulties in Munakata's art.

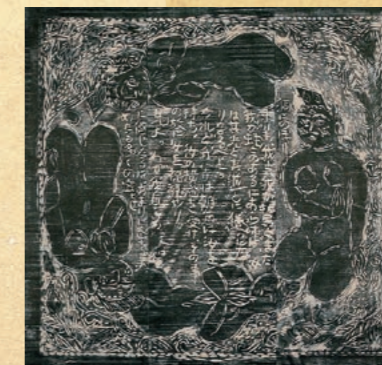
Munakata wielded his chisels with his perspiring face almost touching the surface of the wood he was carving. Eventually, he produced a series of four works, each measuring one square meter and consisting of four carved panels. Titled "Vynlon Shohanga Saku" ("Woodcuts in Praise of Vynlon"), the series is one of Munakata's major works and based on Friedrich Nietzsche's "Thus Spake Zarathustra".



"Daybreak"



"Noon"



"Evening"



"Midnight"

"Vynlon Shohanga Saku" (also known as the "Destiny Woodcuts"): from the Kuraray collection (prints from the same woodcuts are in the Ohara Museum of Art)

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