

**kuraray**

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# Kuraray CSR Report 2017

Corporate Social Responsibility Report

**kuraray**

# “For people and the planet – to achieve what no one else can.”

In order to make today better than yesterday, and tomorrow better than today, we at Kuraray have made completely new and unique things by harnessing the power of chemistry. Many industries and people around the world now choose Kuraray’s technologies, products, and services. We take pride in this fact and are deeply grateful to our customers around the world for making this possible.

Since our founding, we have valued the pioneering spirit. We continually ask ourselves what we can do for the world of tomorrow and the people living in it. “For people and the planet –to achieve what no one else can.” Passed down through the generations, this has been our constant motivation.

We still maintain this mission firmly today. It is Kuraray’s value and our driving force. We continue to cultivate our unique traits, in order to benefit society and the environment. Our goal is continual corporate growth, and we have already taken the next step forward.

## Corporate Statements

### Our Mission

We are committed to developing new fields of business using pioneering technology that improves the environment and enhances the quality of life throughout the world. “For people and the planet — to achieve what no one else can.”

### Our Values

#### Philosophy

- Respect for individuals
- Close cooperation to attain shared goals
- Constant creation of new value

#### Guiding Principles

- Safety is the cornerstone of everything we do
- Customers’ needs are our top priority
- We act on ideas in the workplace

### Our Commitment

- We will constantly develop and provide safe, high-quality products and services.
- We will maintain a sound relationship with society through good communication.
- We will strive to preserve and improve the global environment, and to secure safety and health in all our workplaces.
- We will value all members of the Kuraray community and respect their rights.
- We will always conduct businesses in a free, fair and transparent manner.
- We will honor all intellectual property and secure data and information in a proper manner.

## Kuraray Group Code of Conduct

- Safety and Quality of Products and Services
- Disclosure of Corporate Information
- Anti-Bribery/Rules for Donations
- No Relationships with Anti-Social Group
- Contribution to Society
- Environmental Preservation
- Safety and Disaster Prevention
- Safe and Comfortable Workplace
- Respect for Human Rights
- Enhancement of Diversity, Equal Opportunity
- Compliance with Antitrust/ Competition Laws
- Prevention of Unfair Competition
- Compliance with Laws Related to Exports and Imports
- Prohibition on Entertainment and Gift in an Excessive Manner
- Prohibition on Conflicts of Interest
- Prohibition against Insider-Trading
- Protecting Trade Secrets
- Protecting Intellectual Property

## Editorial Policy

This report conveys the CSR activities that the Kuraray Group implemented in fiscal 2016 with the aim of boosting understanding of them among all stakeholders.

### Reporting Period

Fiscal 2016: Jan. 1 to Dec. 31, 2016

### 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: Reports focus on Kuraray Co., Ltd., but also include some affiliated companies depending on their activities in the respective field. Economic: Kuraray Co., Ltd., consolidated subsidiaries, and equity method affiliates (total 40 companies)

### Referenced Guidelines

In accordance with the CORE of the GRI Sustainability Reporting Guidelines (G4) Environmental Report Guidelines (2012 Edition) of Ministry of the Environments (Japan)

### Issue Date

May 2017 (Previous issue: May 2016; Next issue: May 2018 (planned))

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# Actively undertaking business inside and outside of Japan fully utilizing the Group technologies rich in originality

## Corporate overview

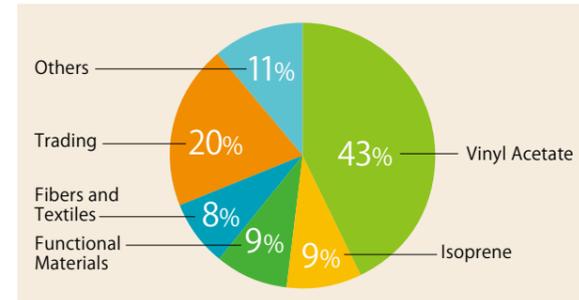
Company name	: Kuraray Co., Ltd.	Head offices	: Tokyo and Osaka
Representative Director and President	: Masaaki Ito	Plants	: Kurashiki, Saijo, Okayama, Niigata, Kashima, Tsurumi
Established	: June 1926	Laboratories	: Kurashiki Research Center, Tsukuba Research Center
Capital	: 89 billion yen (as of Dec. 31, 2016)	Group companies	: 38 consolidated subsidiaries, 1 equity-method affiliate (as of Dec. 31, 2016)
Employees (consolidated)	: 8,590 (as of Dec. 31, 2016)	Major operations	: USA, Germany, Belgium, China, Singapore

## Business Outline

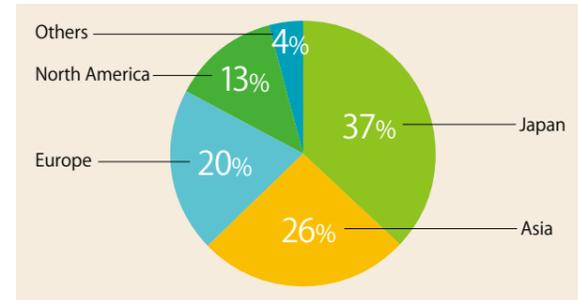
Kuraray was founded for the purpose of commercializing chemical fiber rayon in 1926 in Kurashiki City, Okayama Prefecture. Ever since becoming the first firm in the world to commercialize vinylon fibers after the war based on domestic

technology, we have made use of this unique technology and have delivered a variety of one and only and number-one products to the world as a specialty chemical manufacturer.

### Breakdown of Net Sales by Segment (Fiscal 2016)\*



### Breakdown of Net Sales by Region (Fiscal 2016)\*



\* Sales figures include sales to external customers and the amount of cross-segment internal sales and transfers. The figures do not include the adjustment expense of 103.2 billion yen.

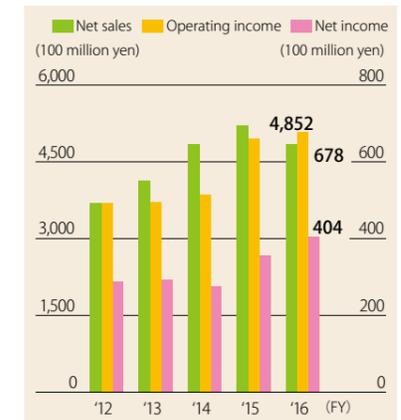
## Breakdown of Net Sales by Segment

<p><b>Vinyl Acetate</b> 253.2 billion</p> <p>In this business, we manufacture and sell poval resin, which features water solubility and adhesive properties, poval film, which can be applied to liquid crystal displays and is also used for single-use packets for detergents and so on, EVAL, which has an excellent gas barrier property, and PVB film used as an interlayer for laminated glass.</p>	<p><b>Isoprene</b> 51.1 billion</p> <p>In this business, we manufacture and sell the world's only synthetic isoprene chemical products and their derivative SEPTON, a thermoplastic elastomer, as well as GENESTAR a new polyamide resin with excellent heat resistance.</p>	<p><b>Functional Materials</b> 52.2 billion</p> <p>In this business, we manufacture and sell CLARINO man-made leather with a structure and functionality as elaborate as natural leather, dental materials that enable repairs that closely resemble natural teeth, and methacrylate resin, which boasts excellent transparency and weather resistance.</p>
<p><b>Fibers and Textiles</b> 48.6 billion</p> <p>In this business, we manufacture and sell vinylon fiber used as a substitute material for asbestos, MAGIC TAPE hook and loop fasteners, KURAFLEX nonwoven fabric used for lifestyle products and industrial materials, and polyester fiber.</p>	<p><b>Trading</b> 119.5 billion</p> <p>In this business, we import, export and sell wholesale fiber and textile products such as polyester filament, resin and chemical products.</p>	<p><b>Others</b> 63.8 billion</p> <p>In this business, we manufacture and sell carbon material and highly functional membranes and systems used in water treatment, conduct an engineering business, as well as handle VECSTAR liquid crystalline polymer film, which is used mainly for flexible circuit boards.</p>

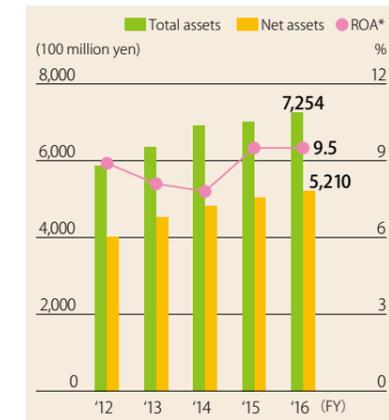
All italicized product names in this report are trademarks of the Kuraray Group.

## Data on Economic Efficiency

### Trends in Consolidated Financial Results

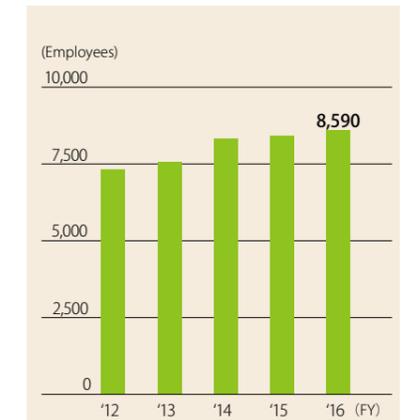


### Trends in Consolidated Total Assets, Net Assets, and Return on Assets



\*ROA: Return on Asset

### Number of Employees (Consolidated)



## Kuraray Group Network

The figures are sales by region in hundred million Japanese yen and breakdowns of sales by region in %.



## The Kuraray Group

38 consolidated subsidiaries/1 equity-method affiliate (40 companies including Kuraray Co., Ltd.)

● Kuraray site ■ Domestic affiliated companies ▲ Domestic Kuraray Group companies ◆ Overseas affiliated companies

<p><b>Domestic</b></p> <ul style="list-style-type: none"> <li>▲ Kuraray Co., Ltd.</li> <li>▲ KURARAY ENGINEERING CO., LTD.</li> <li>▲ KURARAY CHEMICAL CO., LTD.*</li> <li>▲ KURARAY TRADING Co., LTD.</li> <li>▲ Kuraray Plastics Co., Ltd.</li> <li>▲ KURARAYLIVING CO.,LTD.</li> <li>▲ Kuraray Techno Co., Ltd.</li> <li>▲ TECHNO SOFT CO., LTD.</li> <li>▲ Kuraray Travel Service Corporation</li> <li>▲ KURARAY SAIJO CO., LTD.</li> <li>▲ Kuraray Kuraflex Co., Ltd.</li> <li>▲ KURARAY FASTENING CO.,LTD.</li> <li>▲ KURARAY TAMASHIMA COMPANY LIMITED</li> <li>▲ Iruma Country Club Co., Ltd.</li> </ul>	<ul style="list-style-type: none"> <li>▲ OKAYAMA RINKOH CO., LTD.</li> <li>▲ Kuraray Noritake Dental Inc.</li> <li>▲ THE KURASHIKI KOKUSAI HOTEL, LTD.</li> <li>▲ KURARAY AQUA CO., LTD.</li> <li>▲ OKAYAMA RINKOH WAREHOUSE AND TRANSPORT CO., LTD.</li> <li>▲ Kuraray Okayama Spinning CO., LTD.</li> </ul> <p><b>Overseas</b></p> <ul style="list-style-type: none"> <li>◆ Kuraray Holdings U.S.A., Inc.</li> <li>◆ Kuraray America, Inc.</li> <li>◆ MonoSol Holdings, Inc.</li> <li>◆ MonoSol, LLC.</li> <li>◆ MonoSol AF, Ltd.</li> <li>◆ Kuraray Europe GmbH</li> <li>◆ EVAL Europe N.V.</li> </ul>	<ul style="list-style-type: none"> <li>◆ OOO TROSIFOL</li> <li>◆ Kuraray Europe Benelux B.V.</li> <li>◆ Kuraray Europe Moravia s.r.o</li> <li>◆ Kuraray Asia Pacific Pte. Ltd.</li> <li>◆ Kuraray Korea Ltd.</li> <li>◆ Kuraray (Shanghai) Co., Ltd.</li> <li>◆ Kuraray Trading (Shanghai) Co., Ltd.</li> <li>◆ Kuraray China Co., Ltd.</li> <li>◆ Kuraray Hong Kong Co., Ltd.</li> <li>◆ Plantic Technologies Limited</li> <li>◆ Plantic Tribond Pty Ltd.</li> <li>◆ Plantic Technologies (UK) Ltd.</li> <li>◆ Plantic Technologies (Germany) GmbH</li> </ul>
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\* Merged into Kuraray Co., Ltd. effective January 1, 2017



## Vision: To be a Company that Sustainably Grows and Makes a Social Contribution Based on Its Own Technology

**Masaaki Ito**  
Representative Director and President  
Kuraray Co., Ltd.

### Higher Demands for CSR

Today, the demands for corporate social responsibility have intensified. As one example, activities for E-S-G (environment, society and governance) have become critical themes for corporate management. This approach is based on the concept that a steady and continued response to various challenges by corporations based on these three viewpoints becomes a motive power for a sound evolution and growth for corporations that in turn contributes to the formation of a sustainable society.

As one recent topic in the area of the environment, the Paris Agreement that was adopted at COP21 in December 2015, and went into effect in November 2016, can be singled out first. The Paris Agreement hammered out a goal of reducing greenhouse gas emissions substantially to zero by the second half of this century throughout the world, targeted at "controlling the average temperature rise of the world to 2° C or lower."

This historic international agreement manifests a strong sense of crisis entertained among the nations against the spreading of adverse effects caused by climate change on a global scale. I believe that we too in the Kuraray Group as a whole should tackle this goal to realize a sustainable society.

Next, our next social challenge is the acceptance of diversity. "Diversity" embraces a very broad scope such as human ethnicities, languages, genders and religions. First, Kuraray will aim at creating workplaces, in which female workers can play active roles, through continuous improvements of the

workstyle of its employees. Kuraray believes that this initiative will eventually support the growth of Kuraray to be a corporation with vitality where its diverse workers fully demonstrate their capabilities.

Lastly, corporate governance has increasingly become a critical challenge when corporations aim at enhancing their corporate values. Kuraray aims at creating an efficient corporate governance system based on the corporate governance code set by the Tokyo Stock Exchange. Kuraray is determined to enhance its corporate values sustainably over many years while maintaining appropriate relations with its diverse stakeholders and fulfilling its responsibilities to society.

### The Path on which the Kuraray Group should Tread

The basic approach of Kuraray toward CSR follows the belief of our founder, Magosaburo Ohara, "Returning all assets gained from society to society" and the philosophy of our second-generation president Soichiro Ohara, "Any profit which a company might gain should be confined to those profits that come from technological innovation and from consideration of the social and economic benefits it brings to the entire nation." The basic approach of Kuraray embodies the mission "For people and the planet – to achieve what no one else can." Kuraray has the founder who had a clear approach toward corporate social responsibility long before the word CSR was

coined and this sense of mission has been passed down unbroken from generation to generation.

I have always conveyed to our employees my aspiration of wishing "Kuraray to be a company that sustainably grows based on its own technology." In other words, I wish Kuraray to be a company to contribute to society through its business and to sustainably grow with all employees by making its strong core businesses stronger and larger, by expanding the scale of its businesses that are expected to grow using new technologies rich in originality and by increasing the profit of new businesses and products.

### CSR Activities of Kuraray in Action

The thought processes of Kuraray are explained above and one of the tangible activities of Kuraray is participation in the program called "Responsible Care (RC)" promoted by the world's chemical industry. Kuraray expressed its approval of the Responsible Care World Charter when I signed our declaration in support of the charter and is promoting its RC activities as core CSR activities of Kuraray.

The RC activities of Kuraray include activity items such as "Environmental conservation," "Process safety and disaster prevention," "Occupational safety and health," "Logistics safety," "Chemical and product safety" and "Interaction with society." The Kuraray plants in Japan continuously improve their operations autonomously by rotating the PDCA cycle (a cycle consisting of steps for "plan," "do," "check" and "act") for each of these activity items. Our future challenge will be to upgrade the level of our activities as group total activities embracing the Kuraray Group in Japan as well as our overseas affiliates.

Activities to reduce the emissions of greenhouse gases as a goal of the Paris Agreement will be undertaken as part of our RC activities when the Japanese Government presents specific numerical targets together with a legal framework to the industry.

The next topic is improvement of our workstyles. Since as early as 2015, Kuraray has engaged in an activity to recognize the value of time, which is a precious asset bestowed on all people, instead of merely targeting the reduction of overtime hours.

I believe it is extremely important for all employees to work within a giventime, to foster family members and households, to build relationships with communities and to aim at personal growth.

Workstyles at companies are important to "lead a better life." We have been proceeding with work style improvements where each one of the employees works in high quality, efficiency of workplace are improved by all the members and a healthy mind and body is maintained while each one of us uses precious time effectively and makes all effort worthwhile aiming at creation of new values and personal growth.

When these improvements in workstyle are accomplished, the spectrum of activities of female employees, which has been a social issue especially in Japan these days is expected to expand.

At the same time, we consider that the employment of female employees, expansion of their responsibilities and their higher retention rate are crucial issues and have been introducing specific measures to tackle with the issues.

Lastly, talking about corporate governance, in Fiscal 2003, Kuraray established a management consultative committee, increased the number of outside auditors and reinforced the functions of its board of auditors. In Fiscal 2008, Kuraray appointed two outside board directors and this timing in having outside board directors was relatively early for Japanese companies. Through these and other measures, Kuraray is active in enhancing corporate governance. A Kuraray governance report in compliance with the corporate governance code that is introduced by Tokyo Stock Exchange is also compiled in English for disclosure to foreign shareholders.

### Thoroughness in Preventing Recurrence of Incidents

In March 2016, the Fair Trade Commission of Japan made an on-the-spot inspection of Kuraray, involving competitive bidding on specified Vinylon products purchased by the Acquisition, Technology and Logistics Agency of the Defense Ministry. Kuraray fully cooperated with the investigation conducted by the commission. In March 2017, the commission ruled that Kuraray violated the Anti-Monopoly Law and issued a cease and desist order.

Immediately after the on-the-spot inspection, I issued a message to all the Group employees stating "I do not want any profits gained by violating a law or a regulation. Those businesses that cannot produce profits without infringing a law or a regulation must be discontinued."

Additionally, a new version of the Kuraray Group Anti-Monopoly Law Compliance Guideline has been issued and distributed to raise the compliance awareness of the Anti-Monopoly Law among all our personnel. Measures for more thorough compliance have been implemented, including boosting of the compliance system within the organization.\*

Nonetheless, in February 2017, the Fair Trade Commission of Japan again conducted an on-the-spot inspection of Kuraray on suspicion of having violated the Anti-Monopoly Law in connection with activated carbon used in water purification facilities, waste incinerators and other facilities. We deeply regret our failure to find this incident by ourselves. I apologize to all the stakeholders including our customers and business clients for their concerns regarding this matter.

Kuraray takes the series of these events seriously and sincerely and will implement all necessary measures to ensure such incidents will never be repeated.

Kuraray is committed to more thoroughly comply with the laws and regulations and to further devote itself to corporate activities in maintaining good harmony with society in order to regain the trust of its stakeholders and to respond to their expectations.

*Masaaki Ito*

\* Please see page 31 for Kuraray's specific measures in implementing its compliance activities.

## Process Used by the Kuraray Group for Creating Social Value

### Basic Approach to CSR

As a corporate group engaged in manufacturing, Kuraray Group creates economic and social value through providing its excellent products and services to the market.

We in the Kuraray Group believe that the most fundamental responsibility as a group of enterprises is to make a positive contribution to solve social issues such as resource saving, energy saving, environmental conservation and improvement of quality of life through businesses utilizing the unique technologies of Kuraray. These business activities are based on the foundations, namely, "compliance," "safety" and "risk management." In the course of these business activities Quality management for manufacturing sustains the process of value creation.

On the other hand, all company activities are supported by

dialogues with stakeholders (shareholders and investors, customers and consumers, local communities, central and local governments, NPOs). The employees, suppliers, and partners, who participate directly in business activities themselves, are also important stakeholders.

Kuraray is committed to propelling CSR through its business activities by further deepening dialog and cooperation further with its stakeholders.

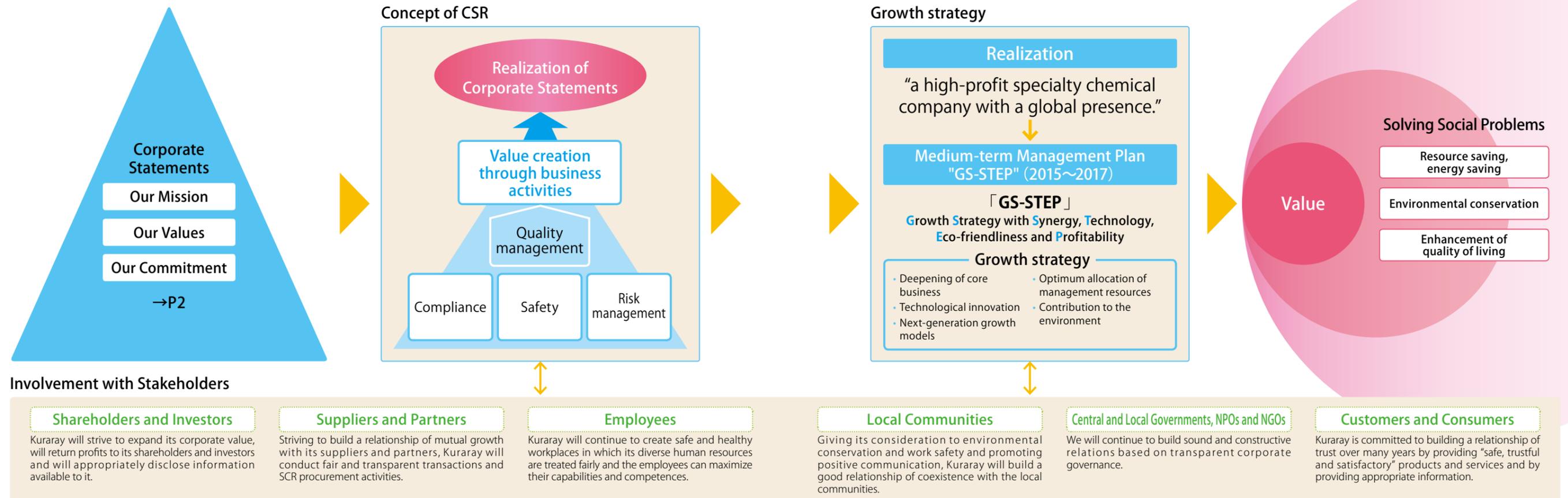
### Responsible consideration given to our stakeholders

Kuraray Group is engaged in the business of providing its products and services by adding higher value to resources received from society. The responsibility that needs to be fulfilled as a

manufacturer is to give maximum consideration not only to impacts on our stakeholders related to the entire material cycle ranging from the activities in which the Group is directly involved, namely, procurement, development, production, selling, and shipping, but also to processing, consumption, waste disposal, and recycling after selling and shipping products to the customers. On the other hand, the Group believes that it is also an important responsibility to invest funds received from our shareholders and investors for business operation, to distribute the results earned in such investment, to reinvest the funds in equipment and research and development for sustainable growth and to appropriately return such earnings to employees, social contribution activities, and other purposes.

### Stakeholder Communication

Stakeholder	Communication
Shareholders and Investors	General meetings of shareholders, plant tours, meetings to explain settlement of accounts
Suppliers and Partners	Purchasing activities, safety councils, liaison meetings, etc.
Employees	Employee awareness surveys, labor-management meetings, personnel evaluation interviews
Local Communities	Responsible Care Regional Dialogue, Meetings with local residents' associations for exchange of views, Plant tours, chemistry classes for boys and girls, Cherry blossom viewing parties, summer festivals and other events
Central and Local Governments, NPOs and NGOs	Plant tours, firefighting drills, volunteer activities
Customers and Consumers	Sales and marketing activities, trade fairs (Eco-Products Fair and other fairs), questionnaires



### Value Chain



## Identification of Materialities by Kuraray Group

For the purposes of meeting various codes and guidelines as social requirements related to our business activities diversify, since 2014, Kuraray Group has been identifying priority issues (materialities). Process of identification, material items (aspects) and future management are posted.

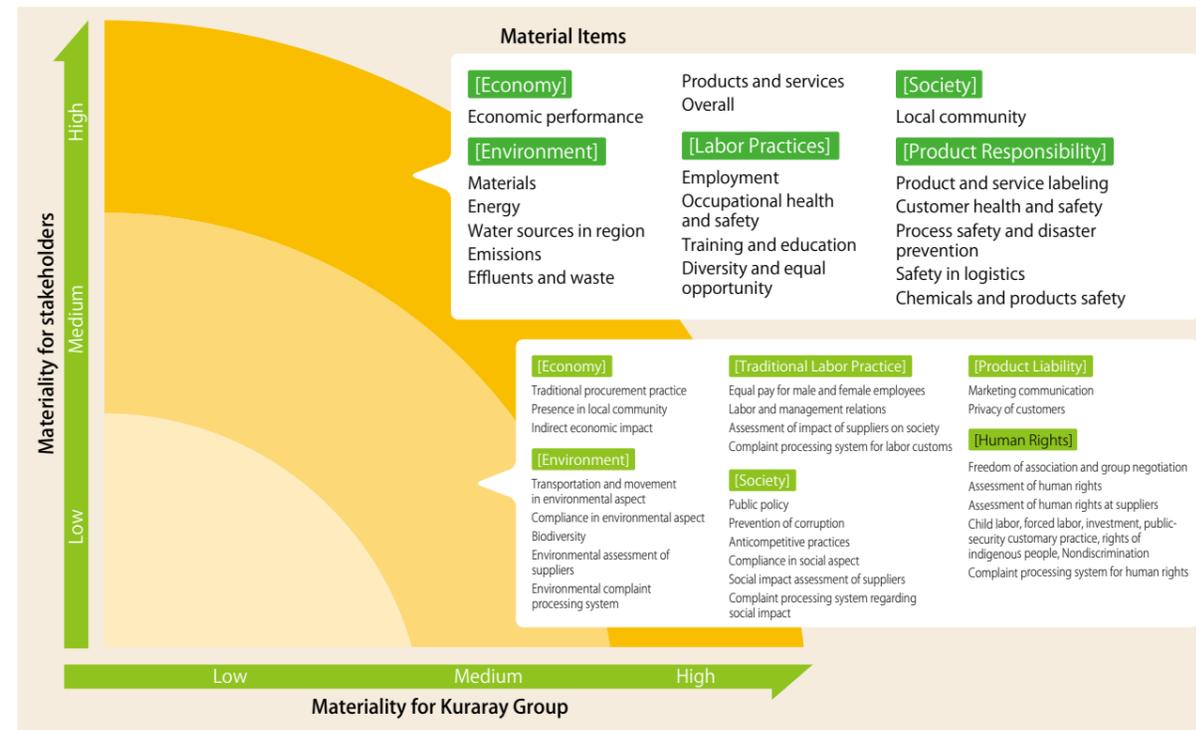
- STEP 1 Selection of items**

Items (aspects) to be studied in terms of importance and priority were selected. Seventy items were selected, using GRI Sustainability Reporting Guidelines Version 4.0, which is an international standard, as an indicator, coupled with requirements in ISO 26000 and Responsible Care (RC).
- STEP 2 Prioritization**

The selected 70 items were evaluated by translating the degree of impact on Kuraray Group in the processes of value chain into points. These processes are procurement (raw materials, equipment, and parts), development to production (waste emission), sales marketing and shipping, processing, consumption, and waste disposal (recycling) and other (relations to local communities and central and local governments). Among them, about 30 items that were ranked high priority were extracted. At the same time, items for which outside stakeholders, financial research organizations, rating agencies and other entities are expecting Kuraray Group to take action were given priority.
- STEP 3 Identification**

The 18 material items were identified by taking Materiality items for stakeholders and Materiality items for Kuraray Group into considerations. Identified items were validated by CSR Committee and reflected in the tasks and targets for related business activities. An approach for material items will be made in future. Periodical reviews will be made to ensure appropriate selection and management of items meeting the changes of the times.

Materiality Map of Kuraray Group



## CSR Activity Target and Results

CSR Activity Target and Materialities of Kuraray Group

	Activity Item	Targety	Material Items	Boundary*1	Results	For more information, please contact:
Management	Medium-term management plan	<ul style="list-style-type: none"> <li>*GS-STEP" (2015 to 2017)</li> <li>• Deepening of core businesses</li> <li>• Technological innovation</li> <li>• Creation of next-generation growth models</li> <li>• Optimum allocation of management resources</li> </ul>	Economic performance Products and services	◎	For the progress status of the medium-term management plan "GS-STEP" that started from FY 2015, please refer to the financial summary for the fiscal year ended December 2016 (2. Management policy).	Web site*2
Safety	Process Safety and Disaster Prevention	<ul style="list-style-type: none"> <li>• Measures to prevent process accidents</li> <li>• Transfer of operational skills and techniques from experienced persons to inexperienced persons (Know-Why activities) and sustainable continuation</li> <li>• Comprehensive understanding of risks and steady implementation of measures</li> </ul>	Process Safety and Disaster Prevention Occupational Safety Logistics Safety Chemicals and products safety	◎	The safety level was improved by implementation of transfer of Operational Skills and Techniques from experienced persons to inexperienced persons (Know-Why activities) as well as grasping of risks and countermeasures against risks. As a result, there are no serious process accidents and domestic occupational incidents have been the best in the past 10 years.	P12 to P15
	Occupational Safety	<ul style="list-style-type: none"> <li>• Enhancement of safety awareness of individual persons</li> <li>• Global deployment of safety activity management</li> </ul>	Safety and health for customers Labeling of products and services	○		
Environment	Global warming prevention	Japan: Greenhouse gas emissions 【Environmental efficiency】 Improvement by 40% compared with Fiscal 2010 (Target year 2020) Overseas: Energy consumption 【Environmental efficiency】 Improvement by 10% compared with Fiscal 2010 (Target year 2020)	Energy Products and services	◎	In Japan, measures to reduce GHG emissions by 10,000tons-CO <sub>2</sub> e were implemented. As a result, the "Environmental Efficiency" of the Kuraray Group in Japan improved compared with fiscal 2010. However, this performance is behind the target of fiscal 2016 envisioned in the Medium-Term Plan. On the other hand, "Environmental Efficiency" of the Overseas affiliates as to energy consumption decreased.	P16 to P21
	Effective Utilization of Water Resources	Overseas: Water consumption 【Environmental efficiency】 Improvement by 10% compared with Fiscal 2010 (Target year 2020)	Water sources in region	○	Although we have not set concrete target in Japan, we strove to make effective use. Overseas water consumption increased with the increase in production volume.	
	Management of chemical substance emission	Japan: Emission of PRTR chemical substances designated by the Japan Chemical Industry Association 【Environmental efficiency】 Improvement by 100% compared with Fiscal 2010 (Target year 2020)	Emission into atmosphere	◎	Emissions of PRTR substances in Japan were lower than the previous year's results, and the environmental efficiency improved compared to FY2010. Overseas, we comply with each chemical substance emission regulation at each production site.	
	Effective Utilization of Waste	Japan and Overseas: Amount of waste generated 【Environmental efficiency】 Improvement by 10% compared with Fiscal 2010 (Target year 2020)	Wastewater and waste Raw materials	○	Since fiscal 2007, Kuraray Group in Japan has been maintaining "an effective utilization rate of waste of: 90% or higher, and final landfill disposal rate of: 1% or lower." In fiscal 2016 also, these rates were maintained. However, environmental efficiency was decreased compared to fiscal 2010 due to the startup of additional facilities and so on. Environmental efficiency also decreased in overseas as well.	
	Environmental Accounting		Overall	○	Investments for environmental conservation purposes totaled ¥382 million (¥420 million for the previous year), while environmental conservation expenses totaled ¥2,359 million (¥2,596 million for the previous year).	Web site *3
Workplaces	Personnel policy allowing employees to feel work is worth accomplishing	Providing growth opportunities to employees	Providing growth opportunities to employees	○	As part of fostering human resources who can actively take part in conducting business internationally, group training was provided for the personnel in the classes of division general managers and section managers. Short-term training and other training programs were undertaken for staff-level personnel, participated by about 50 persons from the Kuraray Group inside and outside of Japan.	P22 to P25
	Diversity, work-life balance	<ul style="list-style-type: none"> <li>• Promotion of active participation by female employees</li> <li>• Refined working style</li> <li>• Minimizing unused annual paid vacation</li> </ul>	Diversity and equal opportunity Employment	○	Workshops for the personnel of the division general manager class were set to promote a corporate culture to further encourage active participation of female employees in business scenes. The first phase of a homeworking scheme and other measures were implemented.	
	Healthy Management of Mind and Body	Continuation and boosting of mental health measures and measures against lifestyle-related diseases	Occupational safety and health	○	As part of a mental care program, supervisor-to-employee mental-care and self-care training sessions and stress checks were undertaken.	
Society	Contribution in Cultural, Academic, Environmental and Social Welfare Fields	Implementation of following activities: <ul style="list-style-type: none"> <li>• "Sending School Backpacks Across the Sea"</li> <li>• "Chemistry Classes for Boys and Girls"</li> <li>• Operation of work facilities for people with intellectual disability</li> <li>• "Kuraray Fureai Fund"</li> <li>• Activity with emphasis on link to local community</li> </ul>	Local community	◎	Activities were undertaken with a focus on the culture, art and science, environment and welfare fields in accordance with the social contribution activity policy of the Kuraray Group.	P26 to P29

\*1 Boundary: Range where influence occurs ◎ Inside and outside organization, ○ Inside organization \*2 [http://www.kuraray.co.jp/ir/pdf/account/170208\\_jp.pdf](http://www.kuraray.co.jp/ir/pdf/account/170208_jp.pdf)  
 \*3 <http://www.kuraray.co.jp/en/csr/report2017/environmental/>

## Process Safety and Disaster Prevention, Occupational Safety, and Logistics Safety

The Kuraray Group is promoting creating safe workplaces that are free of occupational incidents, process accidents, and disasters by raising the safety awareness of our employees and operating a safety management system for preventing occupational incidents and process accidents through early discovery of the risks for them. In preparation for accidents or disasters, we make efforts to minimize damage and to prevent the recurrences accidents or disasters, such as emergency drills, sharing information of accidents or lessons.

### Guiding Principle on Ensuring Safety

"Safety is the Cornerstone of Everything We Do"

### Action Courses on Ensuring Safety (FY 2017)

- Ensure "Safety First, Production (Construction and R&D) Second"
- Take 5 seconds before You Act, and Do "CHECK" in order to eliminate Unsafe Situation (action, behavior, condition)
- Act with sense of ownership and responsibility for all employees, aiming to achieve zero accidents and disasters.

### Safety Management

In accordance with Corporate's Safety Activity Management Regulations, the Kuraray Group develops a safety plans every fiscal year and operates them to ensure occupational safety, process safety, and disaster prevention. To be more specific, each year, at the Safety Promotion Committee attended by the President and executives in charge, we makes an overall assessment and discussion of safety activity performances of previous year and decides activity policy for the coming fiscal year, and we disseminate decided activity policy to all Group companies. In line with this policy, the Group companies are conducting safety activities that reflect the specific action plans of each plant and department. A group of safety representatives from the headquarters, including the executives in charge, visit every plant twice a year to conduct Internal Safety Audits on their safety activity plans, progress management, and the results.



Verification of Sites for Safety Activity at Kurashiki Plant

### Targets and Performance in Safety Priority Activities

Evaluation: O Accomplished, Δ Nearly accomplished, X Not accomplished

Item	FY2016			FY 2017 Priority Activities
	Target	Performance	Evaluation	
Process Safety and Disaster Prevention, Occupational Safety	Enhancement of process safety management level	• Implementation of risk assessment of unusual jobs	O	<ul style="list-style-type: none"> <li>• Enhancement of safety awareness of individual persons</li> <li>• Implementation of risk assessment of unusual Jobs</li> <li>• Implementation of inherently safe countermeasures for serious risks, or minimizing damage</li> <li>• Capability of detecting abnormal signs and dealing with abnormal situations</li> <li>• Constructing the base for globalization of safety activity management</li> </ul>
	Transfer of Operational Skills and Techniques from experienced persons to inexperienced persons (Know-Why activities) and sustainable continuation	• Transfer of operational skills and techniques utilizing career development program (CDP) incorporating "know-why" activities • Installation of new system that integrate education and training	O	
	Grasping of risks and countermeasures against risks	• Implementation of risk assessment aiming at improvement the comprehensiveness • Implementation of inherently safe countermeasures for serious risks	O	
	Enhancement of Safety Awareness of Individual Persons	• KY (Kiken Yochi - hazardous prediction) before starting operation • Pointing & call activities • Educating and compliance with rules • Activity of taking a pause before acting	O	
	Constructing the base for globalization of safety activity management	• Activating intercommunication with overseas affiliates • Construct the database "Global Safety Info" • Globalization of occupational incidents evaluation system	O	

### Numerical Target and Performance

		2015		2016		2017	
		Actual	Target	Actual	Target	Target	Criteria for evaluation
Process Safety	Number of Accidents	Japan	3	0	4	zero	1 ≥
		Outside Japan	1	0	1		none
Occupational Safety	Number of Lost Time Incidents	Japan	6	0	2	zero	AB rank 2 ≥
		Outside Japan	17	0	13		none
	Frequency Rate of All Occupational Incidents	Japan	1.32	0.8 ≥	0.81	zero	0.8 ≥
		Outside Japan	7.26	4.0 ≥	6.10		none

In 2017, the Kuraray Group in Japan will set a new evaluation criterion for safety performance aside from its objective goals. The Group will aim to improve its safety level to below half of the average performance in the past five years. Additionally, evaluation will be made based on the number of occupational incidents that are evaluated as Rank AB in the labor accident evaluation ranking, instead of evaluation based on the number of days off taken due to an occupational incident. This evaluation ranking for occupational incidents is an indicator unique to Kuraray and rates the levels of seriousness of occupational incidents in accordance with the levels of potential disorders and with the levels of faults that caused such accidents. The rank AB is for severe accidents. On the other hand, in 2017, the Kuraray affiliates outside of Japan will set evaluation criteria of their own, instead of setting uniform evaluation criteria for the overseas Kuraray units. The frequency rate of all occupational incidents is the number of all occupational incidents per million working hours. All occupational incidents are defined as incidents requiring at least minor medical attention, based on the definition of a recordable incident by OSHA (Occupational Safety and Health Administration) of the US.

### Process Safety and Disaster Prevention

At the Kuraray Group, we consider it a major responsibility to prevent the occurrence of explosions, fires, leakage of hazardous materials, and other accidents 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 this purpose, we have undertaken activities such as risk assessment related to process safety and disaster prevention, earthquake countermeasures for buildings and plants, and conditioning of the safety management system for facilities in all plants.

We are promoting safety self-activities by implementing them as planned: ① Risk assessment, ② Utilization of accident information and ③ Transfer of technical background (Know-Why activity) in accordance with the "Activity Plan for Industrial Safety" compiled by the Japan Petrochemical Industry Association.

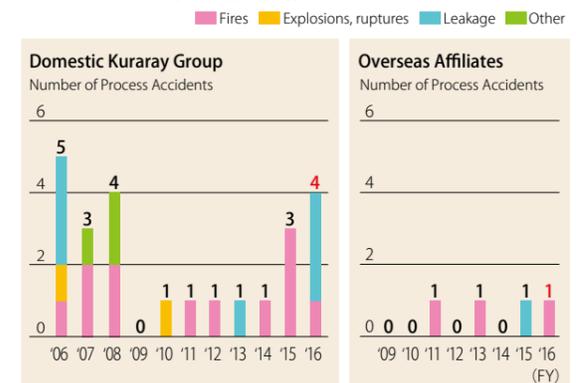
We are undertaking risk assessment of unusual situations such as total power blackout and emergency stop and clarifying the criteria for discriminating abnormal situations in order to activate and enhance effectiveness of risk assessment activities.

Additionally, CDP\*1 activity and KMMS\*2 are continuously undertaken to promote the transfer of operational skills and techniques from experienced persons to inexperienced persons incorporating the Know-Why activities.

In Fiscal 2016, unfortunately, one minor fire accident and three accidents involving leakage of chlorofluorocarbon (CFC) gas from air conditioning equipment occurred inside of Japan. And one minor fire accident occurred outside of Japan. All these accidents had no impacts on the external environment or on human health and safety.

In Fiscal 2017 and thereafter, we will continue to undertake the safety self-activities to prevent accidents.

### Number of Process Accidents



\*1 CDP: A system to evaluate levels of knowledge, skills, techniques, technologies, and action characteristics needed for first-line operators in workplaces to visualize them and to compile an assessment chart for mapping of capabilities of all personnel, to set targets for individual persons, and to provide training based on it.

\*2 KMMS: A facility management system based on the PDCA cycle (P: Plan making for maintenance, D: Do maintenance work, C: Check and evaluate activity results and reassess maintenance plan, and A: Act to review maintenance plan) by evaluating the importance of each piece of equipment in a unit of production activity and by setting an equipment management system in accordance with risks associated with each equipment. By undertaking activities under this system, operators participate in cause analyses of equipment problems and in reviewing countermeasures and equipment management norms, for furtherance of human resource development and transfer of techniques and technologies from experienced persons to inexperienced persons.

### Preparedness against earthquakes and tsunamis

In 2017, Japan is observing the 22nd anniversary of the Great Hanshin and Awaji Earthquake, 6th anniversary of the Great East Japan Earthquake and Tsunami and first anniversary of the Kumamoto Earthquake. Japan is an earthquake-prone country and preparedness against earthquakes and tsunami is a social responsibility of enterprises in Japan. Kuraray is implementing various measures to minimize potential damage caused by earthquakes and tsunamis including the Nankai Trough Earthquake, which is expected to cause large-scale damage in the future, and to ensure early recovery from damage inflicted by earthquakes and tsunamis.

#### Preparedness against Earthquakes

- Emergency evacuation using an emergency earthquake alert, emergency plant shutdowns based on an earthquake flash and emergency shutting off of piping
- An anti-earthquake diagnosis of buildings, plants, facilities, and structures will be conducted. Earthquake-proof reinforcement, rebuilding with earthquakeproof facilities and structures, and installation of evacuation shelters and other facilities will be undertaken as necessary
- Prevention of dispersion of chemicals, furnishings and equipment inside buildings and fixing of them to prevent them from falling over
- Lecture meetings for disaster prevention, emergency drills, evacuation drills and emergency lifesaving training



#### Preparedness against Tsunami

- Building and maintenance of tide embankments and reinforcement of shore protection
- Upgrading of critical equipment and facilities, prevention of inundation, prevention of outflow of hazardous materials
- Indication of elevations (above sea level), posting of information and dissemination of evacuation sites and routes, evacuation drills and anti-disaster agreements concluded with local residents
- Stocking of emergency provisions, apparatuses and other articles to prepare for isolation for a protracted period



## Occupational Safety

Realizing that the safety and health of its employees are the basis of business activities, the Kuraray Group aims to create safe and accident free workplaces by striving to enhance the safety level of each of its employees and organizations through appropriate implementation of its occupational safety management system.

In Fiscal 2016, the frequency rate of lost time incidents and frequency rate of all occupational incidents of the Kuraray Group in Japan were 0.16 and 0.81, respectively, registering the best records since 2005.

On the other hand, in many of the cases that have taken place outside Japan, doctors order employees to take temporary leave from duty even if injuries are minor in severity.

Therefore, the same frequency rate of lost-time accidents applied in Japan cannot be applied to the overseas units.

For this reason, the evaluation is made based on the frequency rate of all occupational incidents severer than minor incidents, instead of lost-time incidents.

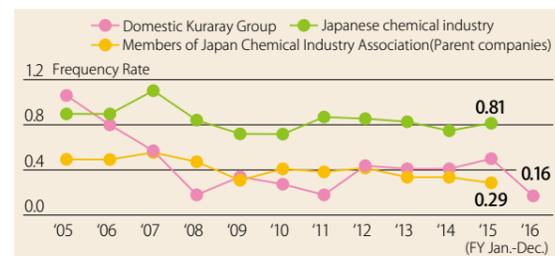
The frequency rate for Fiscal 2016 was 6.10, lower than the 7.26 registered in the previous year.

Generally, the companies in Europe and North America undertake activities focusing on preventing severe accidents and the frequency rate of occupational incidents including slight accidents there tends to be higher than in Japan.

In Fiscal 2017, the overseas Kuraray Group will be using an industrial accident evaluation ranking of Kuraray's own on a trial basis so that the performances of the Group units outside Japan can be evaluated using the same criteria as those for inside Japan.

Global safety meetings and global deployment of a management system for safety activities are planned beginning 2018. These measures are intended to promote the sharing of information on safety activities inside and outside Japan and to improve the frequency rate of lost-time incidents of the overseas Kuraray Group.

Frequency Rate of Lost Time Incidents\*



\* Frequency Rate of Lost Time Incidents : Number of Lost Time Incidents per million work hours.

Frequency Rate of Lost Time Incidents\*



\* Frequency Rate of All Occupational Incidents : Number of all Occupational Incidents per million work hours involving minor incidents and more serious incidents.

## Logistics Safety

To prevent damage to society at large caused by logistics accidents, the Kuraray Group is engaged in an ongoing promotion of activities to ensure logistics safety in the aspects of product shipment and storage.

The Kuraray Logistic Safety Conference, which is the core organization for this activity, marked its 16th year. In Fiscal 2016, filling work of hazardous materials and structures of transport containers were verified on site at the Kashima Operations. Specific measures were shared with the companies outsourced for transport of hazardous materials to raise the awareness of them in dealing with the specific measures to prevent accidents in the transport of hazardous materials. (Nine companies outsourced for the transport of hazardous materials participated in these on-site verification examinations.)

## Topics 2016

### Risk Assessment of Chemical Substances

In 2012, some of the employees and former employees of an offset printing company in Japan, which used a chlorinated organic solvent as a detergent, suffered gallbladder cancer, causing a major social problem. Triggered by this accident, the Industrial Safety and Health Law has been amended. Beginning June 2016, risk assessment of chemical substances has become an obligation for business establishments handling 640 chemical substances that have a certain level of hazard or noxiousness.

Based on risk assessments, the employers are required to improve manufacturing equipment or to implement effective measures to safeguard workers against hazards or health disorders believed caused by such chemical substances.

Several chemical substances are used at worksites of the Kuraray Group. In response to this law revision, the Kuraray Group has reviewed and set new internal rules and regulations related to risk assessments of chemical substances. The Group has inspected how chemical substances are handled at its operations and plants in Japan and has verified that these chemical substances are handled appropriately in accordance with its internal rules and regulations.

Risk assessment is conducted by completing the following steps.



## Chemical products • Product Safety

### Basic Policy on Product Safety

Targeting contribution to realizing an affluent and comfortable society by responding to customer needs through supply of products that are safe and reliable.

### Product Safety

The first paragraph of "Our Commitment," a statement of Kuraray Group reads "We will constantly develop and provide safe, high-quality products and services."

A working group centering on the CSR Division staff has been organized to study products that require a company-wide study of safety and to verify product safety. The products to be studied include those that are ingested in the body and that use nanomaterials.

In Fiscal 2016, a committee was held on development projects that handle various materials in accordance with the regulation on the handling of nanomaterials. As a result, appropriate safety

measures have been taken to ensure safety of the workers, environment and end users.

In Fiscal 2017, the Kuraray Group plans to further strengthen its mechanism to evaluate product safety, in order to continue the supply of safe products in the future also.

### Chemical Substance Management

Kuraray Group is managing chemical substances using an information technology (IT) system.

In Fiscal 2016, improvement of and education on the software of the IT systems of the Group were continued to better comply with the overseas laws and regulations. Periodic opportunities were provided to the managers and their staff for the management of chemical substances assigned to the group companies in Japan and to the corporate divisions, to ensure strict compliance with the laws and regulations.

In Fiscal 2017, the Kuraray Group is striving to improve the quality of its product information supplied to the customers by newly creating an opportunity to share information with the Group companies outside of Japan and by advancing collaboration with them in order to boost the management of chemical substances within the entire Group.

## Topics 2016

### Introduction and Utilization of IT System Dedicated to Management of Chemical Substances

The Kuraray Group has installed and is using an IT system for integrated management of information on chemical substances used to appropriately respond to laws and regulations of the countries and regions that are amended frequently from time to time recently and to information supplied in the supply chain.

The IT system stores the information of the chemical substances used by the Kuraray Group companies in Japan in a database. The system links to external databases that contain information on hazards and on laws and regulations for use in checking products that are required new or additional actions as a result of an amendment to a law or a regulation, in compiling safety data sheets

(SDS) that are supplied to the customers and for other purposes.

As a general trend, the countries and regions of the world are reinforcing and adding laws and regulations related to chemical substances. Kuraray is also facing increases in the number of management items as types and destinations of chemical substances that are used continue to increase. The IT system is currently used mainly in Japan. Kuraray is studying the use of the system in its overseas operations also in the future and is contemplating building a system to effectively manage chemical substances within the entire Group.

### Safety Activities

Kazuhiko Kugawa, Director, Primary Executive Officer

The actual frequency rate of all occupational incidents for Fiscal 2016 for the plans in Japan stood at 0.81 compared with the target of 0.8 or less and was slightly below the target. Nevertheless, this was the best result since 2005 and I would say that this figure could be highly evaluated. Aiming at causing no occupational incidents in Fiscal 2017, we are continuing our effort to further improve our performance. In process safety and disaster prevention, five accidents took place inside and outside of

Japan in Fiscal 2016. Fortunately, these accidents were not major ones that would have caused great impacts on the local communities or on our business. We continue preventing process accidents as they would cause human damage, fires, explosions and other disasters even if they are minor in scale. Our challenge will be to boost collaboration with our overseas plants in overall safety activities as our business has rapidly been globalizing.

# Environmental Management

We believe that the Kuraray Group's mission as a material and intermediate material manufacturer is as follows:

- Contributing to society by providing the materials and intermediate materials required for products that are needed to create a low-carbon society and an eco-friendly society; and
  - Producing items with as low an environmental impact as possible.
- With this in mind, we are working consistently to implement environmental conservation activities that include promoting measures against global warming, managing chemical substance emissions, and the beneficial use of wastes.

**[Note]**

As a result of the change in months in each fiscal year, the environmental data and information contained in this report including graphs are as follows.

- Before fiscal 2013: Actuals in 12 months from April to March of the following year
- Fiscal 2014: Actuals for 9 months from April to December + Actuals for January to March 2014 (or estimated value) [Partially overlaps with fiscal 2013]
- After fiscal 2015 (For reference purposes): Actuals for 12 months from January to December

## Environmental Management System

Kuraray Group has established Kuraray Group Global Environment Action Guidelines and Environmental Activity Policy. Furthermore, continuous improvements in its environmental activities are made by rotating the Plan-Do-Check- Act and improve (PDCA) cycle among the plants, affiliates and head office in accordance with Kuraray Environmental Activity Management Rules. Kuraray plants and affiliates have acquired certificates under ISO 14001 (Environmental Management Systems) and are undertaking environmental conservation activities by rotating the PDCA cycle. Please visit Kuraray's website "Organization Chart of CSR Committee" for more information about the environmental conservation promotion organization of Kuraray Group.

Kuraray has been working on updating the ISO 14001 system as planned to the 2015 version required to be revised by September 2018.

## Environmental Targets and Results

★★★ : Largely achieved, ★★ : Achieved, ★ : Need to be improved

	Scope	FY2016		FY2017 target	Medium-term environmental target (FY2020 target)	Evaluation
		Target	Actual performances			
Global warming prevention	Kuraray Group in Japan	Implement measures to reduce GHG emissions *1 by 20,000 tons-CO <sub>2</sub> e or more compared with FY2015	Reduced by 10,000 tons-CO <sub>2</sub> e compared with FY2015 [Environmental Efficiency (GHG emissions)] Improved by 5.1% compared with FY2010	Implement measures to reduce GHG emissions by 12,000 tons-CO <sub>2</sub> e or more compared with FY2016	[Environmental Efficiency (GHG emissions)] Improve by 40% compared with FY2010	★
	Overseas affiliates	[Environmental Efficiency (energy consumption) *2] Improve by 6% compared with FY2010	Decreased by 6.5% compared with FY2010	[Environmental Efficiency (energy consumption)] Improve by 7% compared with FY2010	[Environmental Efficiency (energy consumption)] Improve by 10% compared with FY2010	★
Management of chemical substance emissions	Kuraray Group in Japan	[JCIA-designated PRTR substance emissions] Maintain the level of FY2010 emissions (1,104 tons), or less	JCIA-designated PRTR substance emissions: 957 tons [Environmental Efficiency (PRTR substance emissions)] Improved by 26.7% compared with FY2010	[JCIA-designated PRTR substance emissions] Maintain the level of Fiscal FY2010 emissions (1,104 tons), or less	[Environmental Efficiency (PRTR substance emissions)] Improve by 100% compared with FY2010	★★
Reduction of Waste	Kuraray Group in Japan	Implement measures to reduce waste by the equivalent of 1% relative to FY2015 (832 tons), or more	Reduced by 1,400 tons [Environmental Efficiency (waste generation)] Decreased by 9.0% compared with FY2010	Implement measures to reduce waste by the equivalent of 1% relative to FY2016 (900 tons), or more	[Environmental Efficiency (waste generation)] Improve by 10% compared with FY2010	★★
	Overseas affiliates	[Environmental Efficiency (waste generation)] Improve by 6% compared with FY2010	Decreased by 41.7% compared with FY2010	[Environmental Efficiency (waste generation)] Improve by 7% compared with FY2010	[Environmental Efficiency (waste generation)] Improve by 10% compared with FY2010	★
Effective utilization of water resources	Kuraray Group in Japan	—	—	Considering the geographical conditions of Kuraray plants in Japan, we don't set a numerical target for the time being. However we will continue to watch the water usage and save it as much as possible.	—	—
	Overseas affiliates	[Environmental Efficiency (water usage except seawater)] Improve by 6% compared with FY2010	Decreased by 40.8% compared with FY2010	[Environmental Efficiency (water usage except seawater)] Improve by 7% compared with FY2010	[Environmental Efficiency (water usage except seawater)] Improve by 10% compared with FY2010	★

\*1 : Greenhouse Gas

\*2 : Almost all electric power and steam is purchased from external sources at Kuraray's overseas affiliates. Because the source of supply has a large effect on GHG emissions (changes in emission factor), energy consumption is evaluated without incorporating the impact of the supply source in order to properly evaluate the activities of our overseas affiliates.

## Kuraray Group Action Guideline for the Global Environment

### Basic Guidelines

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.

## Policy of Environment and Industrial Safety Management Center for Fiscal 2016

● The Kuraray Group tackle following themes

1. Promotion of environmental conservation and environmental improvement activities in accordance with the environmental management system
2. Compliance with statutory requirements
3. Continuous improvement of environmental load to accomplish medium-term environmental targets

## Medium-Term Environmental Plan and Review of the Plan

Kuraray Group has mapped out its Medium-Term Environmental Plan setting fiscal 2010 as a base year and fiscal 2020 as a target year and has been undertaking activities since fiscal 2011. Kuraray's Medium-Term Environmental Plan incorporates an indicator called an "Environmental Efficiency\*" to numerically assess the activity results. The targets are shown in the table on page 16. Nonetheless, the business environment of Kuraray Group has greatly changed compared with the time when the plan was mapped out due to incorporating new business through large scale of M&A in overseas. These changes provided the situation that evaluation using the current "Environmental Efficiency" as an index no longer accurately reflecting the environmental improvement activities in the workplaces. For this reason, we believe that we need to consider reviewing the plan including targets and evaluation index.

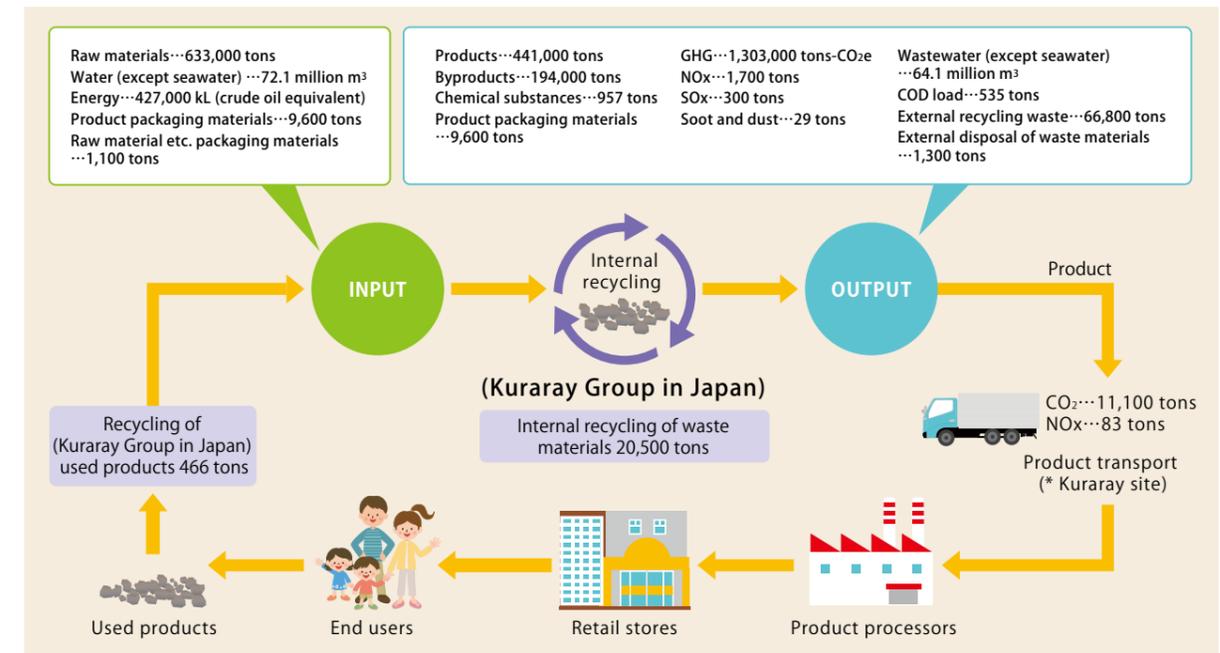
We will set the new evaluation index and targets for both Kuraray Group in Japan and overseas affiliates within fiscal 2017 and will start to operate together with the next Medium-term Management Plan from fiscal 2018.

\* Environmental Efficiency = Net sales/environmental load  
Environmental load: volume of GHG emissions, chemical substance emissions, waste generation, etc.

## Material Flow in Business Activities (Fiscal 2016, Kuraray Group in Japan)

Kuraray Group uses large amount of energy, chemical substances and water resources in the course of its business activities. We make quantitative surveys of used resources and emitted substances associated with our business activities.

## Material Flow (Kuraray Group in Japan)





# Global Warming Prevention

Kuraray Group in Japan has been making CO<sub>2</sub> reduction activities such as increasing biomass fuel volume, using of waste plastic as a fuel, higher operating efficiency, installing of energy saving equipment and steady energy saving activities. In fiscal 2016, we implemented measures to reduce GHG emissions by 10,000 tons-CO<sub>2</sub>e and total GHG emissions of Kuraray Group in Japan were 1,303,000 tons-CO<sub>2</sub>e.

As a result, the "Environmental Efficiency" of Kuraray Group in Japan improved by 5% compared with fiscal 2010. However, this performance is behind the target of 24% improvement as of fiscal 2016 envisioned in the Medium-Term Plan.

On the other hand, the energy consumption of overseas affiliates was 437,000 kL (crude oil equivalent) almost equal to fiscal 2015 in spite of launching new production site by their energy saving activities.

However, the "Environmental Efficiency" of the Overseas affiliates has been decreasing since 2014, and in fiscal 2016 it was below by 6.5% compared with the benchmark year of 2010.

This is because we have acquired the vinyl acetate business which produces raw material of Poval resin to change our business model from purchasing to self-manufacturing. For this reason, energy consumption increased. However the sales did not increase as much as energy consumption.

Actual GHG emissions and energy consumption in 2016 are as follows.

<b>Kuraray Group in Japan</b>	Total: 1,303,000 tons-CO <sub>2</sub> e [FY2015 : 1,265,000 tons-CO <sub>2</sub> e]
<b>Overseas Affiliates</b>	437,000kL (crude oil equivalent) [FY2015 : 443,000kL (crude oil equivalent)]

## Power Generation by Biomass Fuel

At Kurashiki Plant of Kuraray in Japan, biomass fuel\* (wood chippings from construction debris and other sources) has been used as a substitute fuel of coal and the consumption of biomass fuel has steadily been increasing. In fiscal 2016, about 50,000 tons of biomass fuel, roughly the same level as that in fiscal 2015, was consumed, contributing to a reduction of about 75,000 tons-CO<sub>2</sub>e in its emissions.

Kuraray will continue its activities to increase the ratio of biomass fuel consumption accounted for by the fuel in boiler.

\* Biomass absorbs CO<sub>2</sub> in the atmosphere as it grows and can be considered to emit no CO<sub>2</sub> when the CO<sub>2</sub> that is generated while biomass is burnt is subtracted from CO<sub>2</sub> that is absorbed during its growth.

## Reducing Environmental Load during Product Transportation

Kuraray is also reducing its environmental load in the distribution stage of delivering its products to the users, in addition to GHGs emitted by itself during the manufacture of products at its plants and other facilities. Kuraray is continuously active in the "modal shift" of changing transportation means from trucks to cargo trains, ships and other means. Since fiscal 2010, its emissions of GHGs and nitrogen oxides during product transportation have gradually been decreasing. In fiscal 2016, Kuraray emitted almost the same levels of GHGs and nitrogen oxides as those of fiscal 2015.

## Emissions of Scope 3 GHG

The GHG Protocol\* classifies GHG emissions into three categories, Scopes 1, 2 and 3.

### Scope 1; Direct emissions

GHG emissions generated by fuel combustion at the plants and other facilities of own company

### Scope 2; Indirect emissions

GHG emissions generated by the use of purchased energy such as electricity, heat, and steam supplied by other companies

### Scope 3; Other indirect emissions

GHG emissions generated by other companies related to activities of their own company except Scope 1 and 2

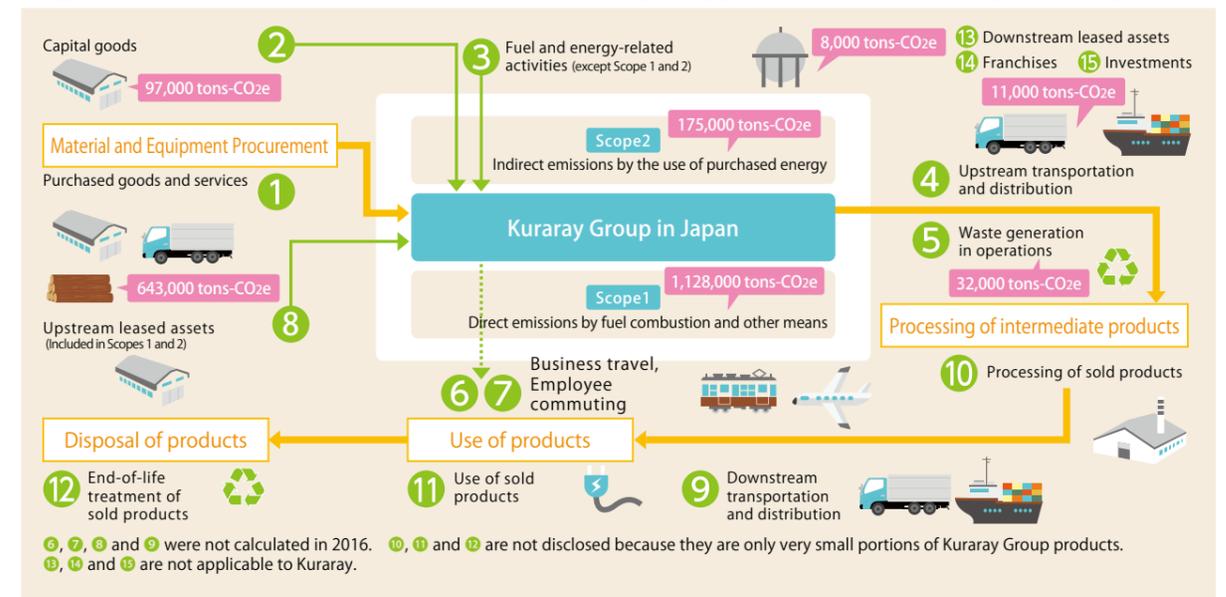
Mandated under the law by which businesses voluntarily calculate and report Scope 1 and Scope 2 to the government, we have been reporting these to the government and publishing the results in our CSR Report and elsewhere.

On the other hand, Scope 3 means the GHG emissions based on the entire supply chain related to Kuraray. We can understand how the indirect GHG emissions are generated from the viewpoint of life cycle such as raw material procurement, product distribution, product use and disposal as well as the direct emissions related to Kuraray's business activities. Kuraray started Scope 3 calculations in fiscal 2013.

Among the 15 categories in total of Scope 3, we calculated 5 categories (①~⑤) that is available in 2016. We will also continue quantitatively to evaluate the CO<sub>2</sub> reduction related to carbon life cycle of Kuraray Group products.

\* GHG Protocol (Greenhouse Gas Protocol) is an initiative scheme to develop international standards and related tools on greenhouse gases and climate change led by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) and participated by corporations, NGOs, government institutions and other organizations throughout the world.

Image of Control on Emissions of Greenhouse Gases in Entire Scope 3 Supply Chain(① to ⑮) show categories of Scope 3)



# Topics 2016

## Review of the Medium-Term Environmental Plan

Kuraray Group has been taken up the review of the Medium-Term Environmental Plan (see page 16) as an issue since 2014 when the business environment of Kuraray Group greatly changed due to large scale of M&A in overseas and increase in production. We have been working on the issue to revise the plan during the period of GS-STEP (Kuraray's Medium-Term Management Plan) from fiscal 2015 to fiscal 2017.

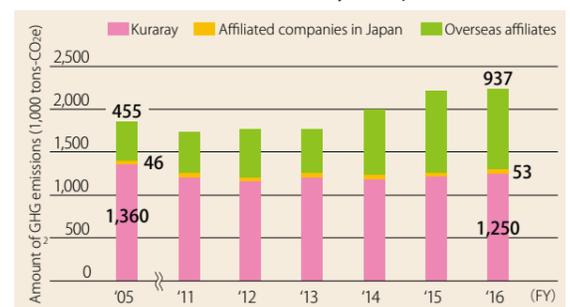
"Environmental Efficiency" as an evaluation index for environmental conservation activities, was defined as "sales/ environmental load" to enable us to evaluate "how business activities were conducted with a small environmental load." Nevertheless, the business situations of Kuraray Group have unexpectedly changed compared with the time when the plan was mapped out. This was because we acquired vinyl acetate business and food packaging film business which resulted in the drastic increase in energy consumption and the increase in the self-manufacturing ratio of raw material of Poval resin.

As a result, the achievement of environmental improvement activities in the workplaces no longer accurately reflected through the current plan starting in 2010 as the base year.

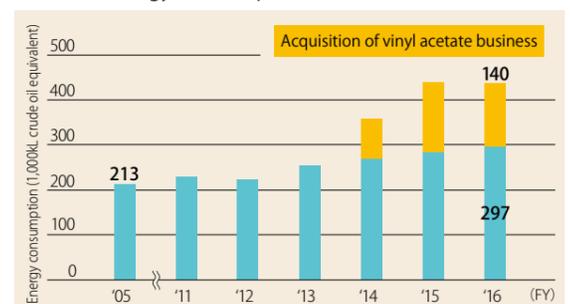
In fiscal 2016, therefore, we discussed this issue in CSR Committee and other conferences. Through the discussion, we organized our basic concepts about the review of the Medium-Term Environmental Plan. In terms of the evaluation index, we have been aiming to find out the new one and have made some case studies by referring to the actual companies examples of inside and outside of Japan. New index will have the benefits which should not be easily affected by the changes of business environment and the achievement of environmental improvement activities in the workplaces will be appropriately reflected.

We will map out the revised plan within fiscal 2017 and will start to operate together with the next Medium-term Management Plan from fiscal 2018.

Trends in GHG Emissions at Kuraray Group



Trends in Energy Consumption at Overseas Affiliates





# Reducing of Environmental Load

## Control on Emission of Chemical Substances

Based on the Law Concerning Reporting, etc. of Pollutant Release and Transfer Register (PRTR Law), Kuraray Group in Japan checks, records and reports relevant chemical substances to the national government of Japan. Kuraray Group similarly discloses on its website and other places emissions of chemical substances not only covered by the PRTR Law, but designated by the Japan Chemical Industry Association (JCIA). In addition to them, persistent organic pollutants (POPs), volatile organic compounds (VOCs), hazardous atmospheric pollutants (HAPs) and particulate matter (PM) are considered to be chemical substances and Kuraray is taking action as explained in the table.

Classification	Actions to be taken
POPs	<ul style="list-style-type: none"> <li>Polychlorobiphenyl (PCB) Storing, managing, reporting and processing to render harmless in accordance with the Law Concerning Special Measures against PCB Waste. (Fiscal 2027 is set as a time limit for harm-free processing)</li> <li>Dioxin and the like Emissions are measured for individual plants and other business units (Please visit Kuraray website)</li> <li>Substances other than the above Not applicable to Kuraray manufacturing and use</li> </ul>
VOC	Included as substances in the pollutant release and transfer register (PRTR) and emissions are measured and reported as PRTR substances. (Please visit Kuraray website for emissions by each plant)
HAP	Included as substances in the pollutant release and transfer register (PRTR) and emissions are measured and reported as PRTR substances. (Please visit Kuraray website for emissions by each plant)
PM	Emissions of particles of soot are reported in Material Flow on page 17 of this report
PRTR	Emissions of substances applicable to the law and to the list compiled by the Japan Chemical Industry Association are measured and reported (Please visit Kuraray website for emissions by each plant)

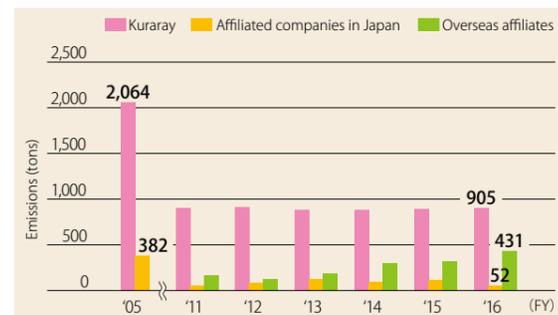
In fiscal 2016, emissions of PRTR substances of entire Kuraray Group in Japan totaled 957 tons (873 tons into atmosphere and 84 tons into water areas).

The "Environmental Efficiency" of Kuraray Group in Japan improved by 26.7% compared with Fiscal 2010.

Even though the production volume has increased, we took measures not to increase emissions such as changing the production process from an organic solvent system to a water system.

The emissions of Kuraray overseas affiliates shows increasing trend due to incorporating new business through M&A in overseas. However we are working on the control on emissions complying with the strict regulations for chemical substances of each country. Emissions of Kuraray overseas affiliates totaled 431 tons in fiscal 2016.

### Trends in Chemical Substance Emissions at Kuraray Group



\* Substances subject to the PRTR Act and substances designated by the Japan Chemical Industry Association

## Reduction and Effective use of Waste, and Reduction of Landfill Waste

Since fiscal 2007, Kuraray Group in Japan has been maintaining "an effective utilization rate of waste: 90% or higher, and final landfill disposal rate: 1% or lower." In fiscal 2016 also, these rates were maintained and the result of an effective utilization rate was 97.0% and final landfill disposal rate was 0.37%.

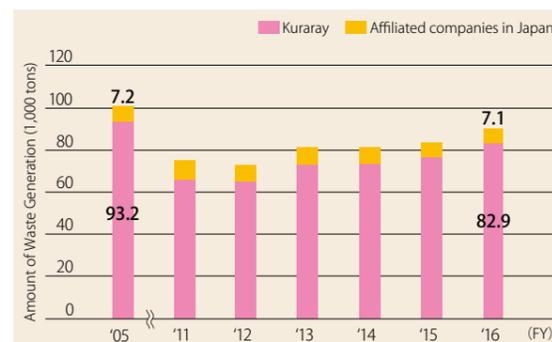
"Environmental Efficiency" of fiscal 2016 decreased by 9.0% compared with fiscal 2010. Waste generation of Kuraray Group in Japan has shown increasing trend for the past few years due to the increase in production volume. However the plants and affiliates are making continuous efforts to maximally reduce waste generation such as by improving product yields and taking some measures.

Almost all of the additional volume of waste generation was recycled to the material or thermal resources which resulted in having kept high beneficial use rate of waste. Through this activity, we are taking care of not affecting to the external environment.

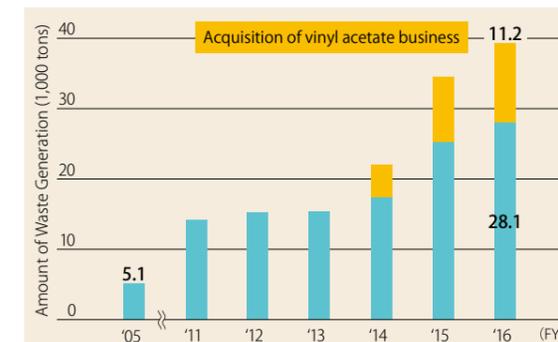
On the other hand, the production volume of Kuraray overseas affiliates is largely increasing due to incorporating new business through M&A (the volume tripled compared with fiscal 2010 including the raw material of Poval resin). The volume of waste generation also tripled in the same period in spite of making reducing efforts. For this reason, the "Environmental Efficiency" decreased by 41.7% compared with fiscal 2010. We will continue to work on watching future trend and taking reducing measures such as by optimizing the operating conditions and recycling materials.

The reason why the amount of waste generation of Kuraray overseas affiliates is very small compared with Kuraray group in Japan is that the utilities such as electricity are purchased from outside suppliers and that wastewater treatment is outsourced to outside disposal companies so that soot and incineration residues from boilers and sludge from wastewater treatment facilities are not generated physically.

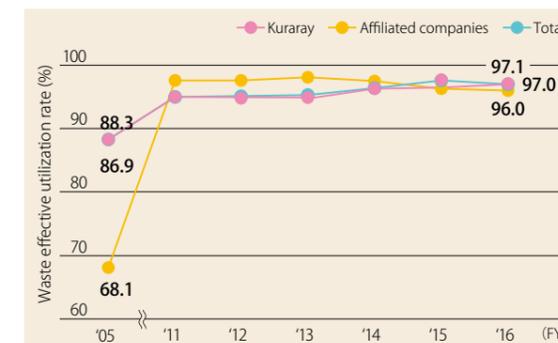
### Trends in the Amount of Waste Generation at Kuraray Group in Japan



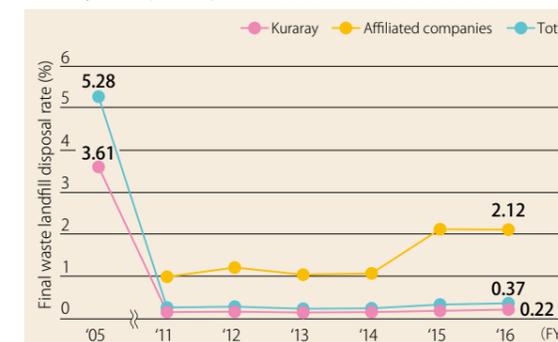
### Trends in the Amount of Waste Generation at Overseas affiliates



### Trends in Waste Effective Utilization Rate at Kuraray Group in Japan



### Trends in Final Waste Landfill Disposal Rate at Kuraray Group in Japan



## Effective Utilization of Water Resources

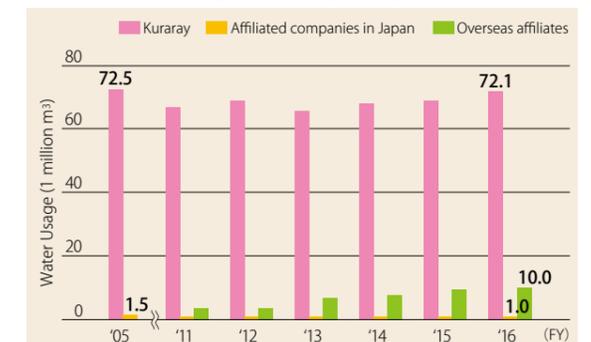
Kuraray Group, including its overseas affiliates, is not engaged in production activities in areas in which water resources are scant and their business activities affect water sources of such areas.

The volume of water intake (except seawater) of Kuraray Group in Japan totaled 73.1 million m<sup>3</sup> per year and has been increasing in the past few years due to the increase in the production volume. Some Kuraray plants in Japan are reusing the water such as by recycling thermal resources from hot waste water and cooling water for boiler operation.

Even though Kuraray plants in Japan are located in good places in terms of water resources, we believe that it is necessary to conduct its business activities by considering the long-term prospects of water supply such as risk of water shortage caused by climate change due to global warming. We will keep track of water consumption trends while continuously reducing our water consumption.

Since fiscal 2014, water consumption of Kuraray overseas affiliates has been increasing due to incorporating new business through M&A in overseas such as increase in the self-manufacturing ratio of raw material of Poval resin. As a result, the "Environmental Efficiency" decreased by 40.8% compared with fiscal 2010.

### Trends in Water Usage at Kuraray Group



## Environmental Activities

Kazuhiko Kugawa, Director, Primary Executive Officer

Our production plants inside and outside of Japan have acquired ISO 14001 (Environmental management systems) certification and are active in environmental conservation activities. In the five years leading up to 2015, the Kuraray plants in Japan reduced 140,000 tons-CO<sub>2</sub>e (target 100,000 tons-CO<sub>2</sub>e) through the use of wood biomass as fuel for in-house power generation, installation of high-efficiency gas engine generators and energy-saving activities. However, the reduction performance for the Kuraray plants in Japan remained low in 2016, 10,000 tons-CO<sub>2</sub>e compared

with our target of 20,000 tons-CO<sub>2</sub>e. Effective measures to reduce global warming gases are decreasing, but the Kuraray Group will continue to reduce the emission through originality and ingenuity. At the same time, as a manufacturer of materials and intermediates, Kuraray will manufacture and provide materials and intermediates, which are required in building a low-carbon and low environmental-load society, at an environmental load as low as possible.



# Activities at Workplace

Through the Kuraray Group Global Human Resources (HR) Policy, Kuraray Group is making efforts to develop its organizational system regarding the 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.
- 2 We will abolish discrimination and respect diversity and individuality.
- 3 We will carry out our HR activities in full compliance with applicable laws and regulations.
- 4 We will create HR systems that uphold equality, fairness and transparency.
- 5 We will strive to improve the environment of workplaces.
- 6 We will strive to employ personnel who are able to contribute to the development of the Kuraray Group.
- 7 We will place the right person in the right job.
- 8 We will implement evaluation and benefits systems that are fairly satisfactory.
- 9 We will support professional development.
- 10 We will strive to promote communication and disclosure information as appropriate.

## Sociality Goals and Actual Performance

Theme	Goal	Event and Result	Evaluation and Challenges	Fiscal 2017 Plan
Implementing Personnel Policy Allowing Employees to Feel Work is Worth Accomplishing	Provisioning of growth opportunities to the Employees	<ul style="list-style-type: none"> <li>Provided the program "Training for Designing One's Own Career" to employees in various age brackets</li> <li>Increased the number of career advisors from one to two persons</li> <li>Opened a website page for transmission of information on career development</li> </ul>	<ul style="list-style-type: none"> <li>Challenges are fixation of this system within the Group and utilization in the activity to promote participation by females as one approach</li> </ul>	<ul style="list-style-type: none"> <li>Fixation of "Mechanism to Support Autonomous Career Development"</li> </ul>
		<ul style="list-style-type: none"> <li>A mentor program to assign mentors to new managerial workers has been continued and briefing sessions for mentor candidates have been held to spread the objective of the program</li> </ul>	<ul style="list-style-type: none"> <li>Fixation of this system is a challenge</li> </ul>	<ul style="list-style-type: none"> <li>The mentor program is continuously being implemented</li> </ul>
		<ul style="list-style-type: none"> <li>GTT was undertaken, participated by seven overseas Group companies (Please see page 23).</li> </ul>	<ul style="list-style-type: none"> <li>More Group employees and countries from abroad are participating. How to keep and increase the number of participating countries is a challenge</li> </ul>	<ul style="list-style-type: none"> <li>Continued implementation of the GTT program</li> </ul>
		<ul style="list-style-type: none"> <li>In preparation for the introduction of a new globally uniform personnel system (applicable to managerial positions and higher) beginning Fiscal 2017, the new personnel system was put in place. Information on the new system was disseminated and briefing was provided to related persons</li> </ul>	<ul style="list-style-type: none"> <li>Smooth start up and subsequent fixation of the system are the challenges</li> </ul>	<ul style="list-style-type: none"> <li>Fixation and improvement of the globally uniform personnel system</li> </ul>
Promotion of Diversity and Work-Life Balance	Promotion of active participation by female employees	<ul style="list-style-type: none"> <li>Workshops were staged for all personnel in the division general manager class</li> </ul>	<ul style="list-style-type: none"> <li>Development of a future plan based on the results of implementation in Fiscal 2016 is a challenge</li> </ul>	<ul style="list-style-type: none"> <li>Workshops for personnel in the department general manager class will be staged.</li> <li>Training and education programs are planned for the Group female employees to raise their awareness and for other purposes.</li> </ul>
	Refined working style	<ul style="list-style-type: none"> <li>Newly started a flextime system (To deal with teleconferencing with overseas staff)</li> <li>Implemented Phase 1 of the homeworking system</li> </ul>	<ul style="list-style-type: none"> <li>The challenge will be to propose and implement tangible actions to refine working style</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of a working system tailored to diverse ways of working</li> </ul>
	Minimizing unused annual paid vacations	<ul style="list-style-type: none"> <li>Achieved 80% use of annual paid vacation on average (Please see page 24)</li> </ul>	<ul style="list-style-type: none"> <li>The challenge will be to further raise the rate of annual paid vacations and to maintain the rate of 80%</li> </ul>	<ul style="list-style-type: none"> <li>A study of specific measures to promote acquisition</li> </ul>
Reinforcement and Promotion of Schemes for Management of Healthy Mind and Body	Continuation and beefing up of mental support measures	<ul style="list-style-type: none"> <li>Line-care training and self-care training was continuously provided</li> <li>Conducted a stress check within the Kuraray Group in Japan.</li> </ul>	<ul style="list-style-type: none"> <li>Implemented as planned. Continuous implementation according to the plan is a challenge</li> </ul>	<ul style="list-style-type: none"> <li>Training programs continuously provided</li> <li>Stress check to be made</li> </ul>
	Continuation and beefing up of countermeasures for lifestyle-related diseases	<ul style="list-style-type: none"> <li>Health improvement campaign : Sponsored health improvement events</li> <li>No-smoking campaign : Sponsored no-smoking seminar</li> </ul>	<ul style="list-style-type: none"> <li>Continuation of measures is a challenge</li> </ul>	<ul style="list-style-type: none"> <li>Continuation of health improvement campaign</li> <li>Implementation of no-smoking campaign</li> </ul>

\* Mentor: An elder employee who started in the Group earlier than a new employee and who is in the same workplace of a new employee or in a similar situation, to act as a mentor and a person to be relied upon for consultation and for support in expanding the human network for a new employee and in other purposes.

### Number of Employees As of December 31, 2017

	Total	Male	Female
Kuraray Group as a whole	8,590	7,119	1,471
Kuraray only	3,386	3,031	355

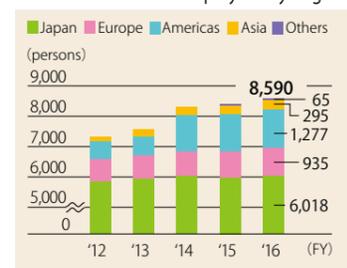
### Employee Turnover Rate FY 2016

	Number of those leaving employment	Turnover rate
Personal reasons	36	1.1%
Retirement	68	2.2%

### Trends in the Number of Employees



### Trends in Number of Employees by Region

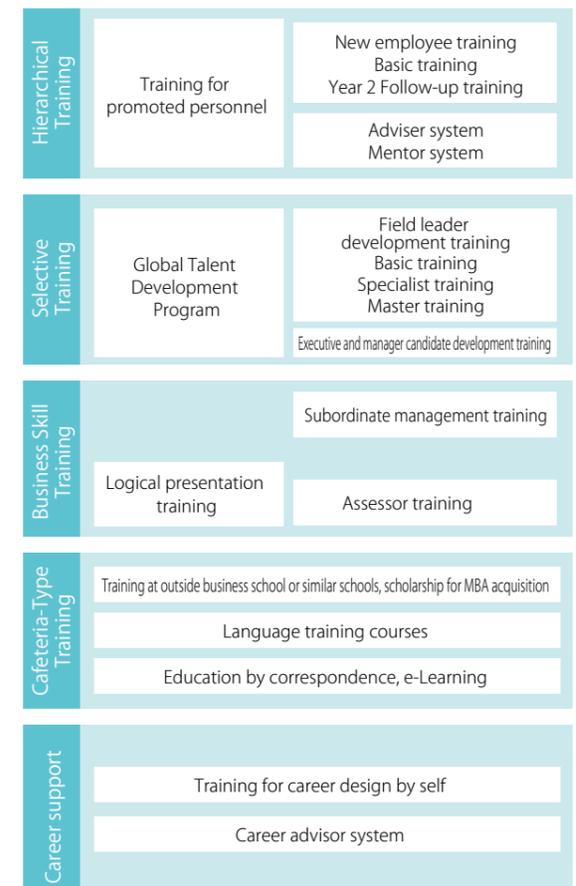


## Training Program

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 parttime and contract-based ones, as necessary. In addition, Kuraray plants and domestic 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 selfimprovement.

### Companywide Training Programs at Kuraray



## Global Talent Development Program

Training is provided at each level of the organization to foster personnel who can actively play a part on the global stage to further accelerate global growth of the Kuraray Group.

In Fiscal 2016, group training (executive management training and global team training) for personnel of the division general

manager class and section manager class and short-term training for staff personnel were provided among the planned training programs. A total of slightly more than 50 persons from the organizations inside and outside of Japan participated in these training programs.

In Fiscal 2017, training for the classes of department general managers and section managers will be provided with a revised training content.

## Global Talent Development Program



## A Fair, Impartial, and Transparent HR System

### HR System

Kuraray has instituted 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 instituted 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.

In Fiscal 2017, the globally uniform personnel system mainly for the personnel in managerial positions will be introduced to further utilize and activate human resources working within the Kuraray Group. A review of wages, allowances, bonuses and work systems will be continued to further enhance an understanding of the employee treatment system.

### Evaluation

Personnel are evaluated based on management by objectives, in which goals for job duties and competence development are set after consultation between superiors and subordinates, and actual performances of individual employees are evaluated. Assessor training is continuously provided also.

Promotion of Diversity

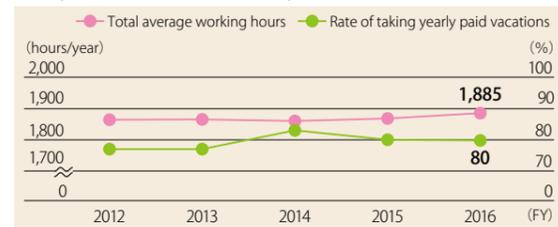
Kuraray aims at enhancing its organizational power by maximizing the capabilities of its diverse human resources. In particular, in Fiscal 2016, workshops for personnel in the division general manager class were staged to create a corporate culture in order to promote more active participation by female employees with a focus on three points - employing more female employees, expanding areas of their responsibility at work and enabling female employees to work longer at their workplaces. Plans for Fiscal 2017 include workshops for personnel in the department general manager class and training for female employees to enhance their career awareness so that career development and household circumstances such as child rearing can be accomplished at the same time.

Scheme for Work-Life Balance

Employment Systems and Average Working Hours

Kuraray has instituted systems for flexibility in employment. These main systems include discretionary labor systems for adaptation to the nature of individual work, the "de facto working hour" system for out-of office work, and variable working hour system. We also have no-overtime days and are striving to improve the rate of taking yearly paid vacations.

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



Leave for Childcare and Nursing Care

Kuraray has a scheme in place to support childcare and nursing care by its employees. 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. We recommend male employees to take childcare leave to encourage more fathers to get involved in child rearing.

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

Fiscal year	Childcare	Male employees	Nursing care
FY 2014	46	7	2
FY 2015	48	18	2
FY 2016	43	27	0

System Allowing Employees to Take Temporary Leave from Duty to Live Abroad with Spouse Assigned to Overseas Post

A system has been established and implemented allowing employees to take a temporary leave from duty to accompany their spouse who is assigned to an overseas post or in a similar circumstance. Those employees who take a temporary leave from duty are allowed to return to their posts in the Kuraray Group when the overseas assignment of their spouse terminates or when a similar circumstance ends.

Employment of People with Disabilities

In addition to meeting the statutory employment rate (2.0%), Kuraray is supporting self-sustenance of people with disabilities in cooperation with communities and support groups for people with disabilities. Kuraray has opened workshops for people with intellectual disabilities in cooperation with local welfare facilities.

Rate of Employment of People with Disabilities (Kuraray)



\* The statutory employment rate for disabled persons was revised from 1.8% to 2.0% in April 2013.

Scheme for Management of Healthy Mind and Body

Basic Policy for Occupational Health

To provide a 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 Our Commitment, 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 strives to provide a healthy and safe work environment for its employees and engages in health promotion activities.

Mental Health Care Schemes

Kuraray has four care schemes including schemes for self-care and line care in an effort to reduce mental disorders. Kuraray has implemented and is promoting a stress check, training for the prevention of a mental or physical disorder, a consulting system such as counseling, and work attendance system allowing employees on a rehabilitation program to work on a time schedule suiting their rehabilitation programs when they return to their workplaces.

Support for Health Improvement

Enhancement of health awareness of the employees is promoted through personal guidance on health, promotion of health improvement campaigns and other means. "Health Improvement Operation" is carried out companywide urging the employees to voluntarily deal with improvement of their lifestyles. Health checkups featuring checkup items surpassing the checkup items required by laws are provided to find employees who need health improvement.

Topics 2016



1 Mechanism to Support Autonomous Career Development

Beginning Fiscal 2015, the domestic Kuraray group has inaugurated a "mechanism to support autonomous career development," aiming at creating organizations in which each employee actively tackles his or her career development and engages with work enthusiastically. As part of this scheme, "Training for Designing One's

Own Career" is undertaken for employees in three age brackets (30s, 40s and 50s). In the two years up to 2016, 196 persons received the training. After receiving the training, the trainees are interviewed by a career advisor and receive support to attain their career goals.

2 The message by Career Advisor



This training scheme aims at fostering individuals by awakening each individual to the following four points. ① To be aware of career independence and be free of orientation to preserve the status quo. ② To have a sense of involvement in career development and to find diverse possibilities based on being like oneself even though unanticipated situations occur. ③ To be active in developing capability, in creating one's own job and in shaping one's own place for living. ④ To be able to contribute to the activation and growth of his or her organization in response to expectations of one's own organization.

More specifically, the following activities are undertaken. ① Support of growth in the future keeping in mind a behavior modification. ② Sorting out of issues and problems in accordance with age, role in job, family composition, circumstances in the organization and other factors. ③ Counseling and support on human relations, enhanced communication skill, intracompany career and life career.

One year after initial counselling, the career advisors follow up whether or not new risks and obstacles exist in realizing career goals. The career advisors also make proposals for creating a corporate culture and organizations that place an emphasis on career independence.

(Career Advisor : Kunihiko Ogawa)

Activities at Workplaces

Kazuhiko Kugawa, Director, Primary Executive Officer

As stated in the Statement from Kuraray's Top Executive, Kuraray is implementing a variety of measures to "lead a better life." As one example of these measures, a system has been established and implemented in Japan allowing employees to take a temporary leave from duty to accompany their spouse who is assigned to an overseas post, in order to lower the employee turnover ratio of female employees, in addition to systems that had been implemented. These measures have achieved a

certain level of results. Kuraray will aim at creating workplaces in which all employees including female employees can work easier and better, including homeworking and flextime systems. Attuned to the rapid globalization trend of Kuraray's business, a globally-uniform human resource system will be created within the Group in order to achieve an optimal allocation and effective utilization of human resources.

## Interaction with Society

We in the Kuraray Group consider the sound and sustainable advancement of society a precondition for corporate growth and prosperity, as well as 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 with genuine value to the people. Beyond this, we consider assistance with the resolution of social issues within an appropriate scope to be another important form of social contribution in our capacity as a corporate citizen.

In fiscal 2016, the Kuraray Group carried out activities focusing on culture, science, environment and social welfare in accordance with its policy for social contribution activities.

### Kuraray Group Policy for Social Contribution Activities

To fulfill its responsibilities as a member of society, the Kuraray Group shall make vigorous approaches to social contribution activities in accordance with the following policy.

#### Types of Activities

- Activities that lead to a resolution of social issues
- Activities rooted in local communities where Kuraray's establishments are based
- Activities emphasizing participation by employees on their own initiative
- Activities that are sustainable in the long term

#### Areas of Activities

Priority areas: culture, science, environment, and social welfare

### Goals and Actual Results in Social Interaction

Goal	Fiscal 2016		Fiscal 2017 Goals
	Actual Results	Evaluation and Challenges	
[Science] "Sending School Backpacks Across the Sea" campaign was steadily undertaken	<ul style="list-style-type: none"> <li>• Delivered 7,732 backpacks</li> <li>• Advertise to collect school backpacks through the Kuraray website and nearby elementary schools of Kuraray plants</li> </ul>	<ul style="list-style-type: none"> <li>• The campaign was carried out as planned. This campaign will be hosted next fiscal year also.</li> </ul>	<ul style="list-style-type: none"> <li>• "Sending School Backpacks Across the Sea" campaign will be steadily undertaken</li> </ul>
[Science] "Chemistry Classes for Boys and Girls" was hosted at the five plants and head office of Kuraray more than once this year	<ul style="list-style-type: none"> <li>• Hosted 13 times in total with 289 participants (Twice at Kurashiki Plant, three times at Saijo Plant, twice at Okayama Plant, four times at Niigata Plant and twice at Kashima Plant) Additionally, Kashima Plant participated in the Kamisu Festa and the Science Festival for Youths.</li> <li>• Tokyo Head Office participated in the Children's Summer Chemistry Experiment Show (held at Science Museum)</li> </ul>	<ul style="list-style-type: none"> <li>• The event was carried out as planned.</li> </ul>	<ul style="list-style-type: none"> <li>• To sponsor events more than once per year at each plant</li> <li>• To sponsor events outside the company</li> </ul>
[Social Welfare] Operating workshops for people with intellectual disabilities	<ul style="list-style-type: none"> <li>• Number of people employed/Intellectually and physically disabled: 36 people, Instructors: 12 people</li> </ul>	<ul style="list-style-type: none"> <li>• The targeted number of people were hired as planned.</li> </ul>	<ul style="list-style-type: none"> <li>• To continuously employ the same number of people at the workshops</li> </ul>
[Culture] [Science] [Environment] [Social Welfare] To steadfastly undertake existing activities at plants, sites and affiliated companies focusing on the relationship with local communities	<ul style="list-style-type: none"> <li>• On-going activities were steadfastly undertaken</li> </ul>	<ul style="list-style-type: none"> <li>• Activities that have been undertaken in the past could be steadfastly continuously conducted.</li> <li>• A recapitulation of the situations surrounding the activities undertaken by the overseas operations was made.</li> </ul>	<ul style="list-style-type: none"> <li>• To continuously carry out the activities</li> <li>• Situations surrounding the activities undertaken by the entire Kuraray Group including the overseas operations are continuously being grasped.</li> </ul>

### Activities in Culture Field

The Kuraray Group continues to support the Ohara Museum of Art, which was established by Magosaburo Ohara, the first president of the company. The Group also supports cultural activities at its plants and sites.



The Ohara Museum of Art

Okayama Plant has been holding the Elementary School Student Painting and Calligraphy Contest annually since 2005. Having become a fixture in the local community thanks to its ongoing successes, this contest received numerous artwork entries from five elementary schools in Fiscal 2016. Winning entries are displayed at the local community center, and all entries are shown on the Kuraray website. This contest will be continuously sponsored.



Contest on Painting and Calligraphy at Okayama Plant

### Activities in Science Field

In fiscal 2016, the Kuraray plants sponsored the Chemistry Classes for Boys and Girls, participated in outside events and sponsored sports tournaments to foster healthy juniors and teenagers by continuously supporting on-going activities.

#### Chemistry Classes for Boys and Girls

Kuraray conducts the "Chemistry Classes for Boys and Girls" program with the goal of enabling elementary school students to experience the fun of chemistry through experimental work. In this program, employee volunteers of Kuraray serve as lecturers and assistants in dedicated classrooms in Kuraray plant premises, as well as in elementary schools and public facilities in the areas. This program has been sponsored every year since 1992 at Kuraray plants in Japan. In Fiscal 2016, 289 children and family members participated in thirteen class events. Tokyo Head Office participated in the Children's Summer Chemistry Experiment Show held in Tokyo's Chiyoda Ward. Kashima Plant participated in the Kamisu Festa held in Kamisu City, and the Science Festival for Youths in Hokota City, all in Ibaraki Prefecture. Kuraray's booths were visited by about 2,800 people. We will continue these events in the future.



The Kamisu Festival (Kashima Plant)

Plant	Class name	Number of classes	Number of participants
Kurashiki Plant	Fun Chemistry House	69	1,840
Saijo Plant	Exciting Chemistry Class	70	2,082
Okayama Plant	Fun Chemistry Class	43	1,356
Niigata Plant	Wondrous Laboratory	55	1,570
Kashima Plant	Fun Chemistry Class	21	1,283
Total		258	8,131

### Various Sports Events Sponsored

Various plants of Kuraray are sponsoring sports events from the standpoint of fostering healthy juniors and teenagers. In Fiscal 2016, various sports and other events were hosted at the plants of Kuraray, including a tennis tournament for children at the Okayama Plant that was started in Fiscal 2015. Kuraray is offering its baseball parks, gymnasiums and tennis courts to students of nearby schools for the promotion of sports in neighboring areas. These activities will be continued in the future.



Children's Tennis Tournament, Okayama Prefecture

### Activities in Environmental Field

Aiming at implementing forest conservation work and volunteer cleaning work carried out every year, in Fiscal 2016, Okayama Plant undertook "Kuraray Mirai no Mori (Kuraray Forest of Future) Activity," and Niigata Plant undertook the "MIRABAKESSO Forest Creating Activity." All the plants undertook volunteer cleaning work.

The Group companies are also periodically undertaking voluntary environmental work such as cleaning of areas around their plants.

At each Kuraray plant, employee volunteers engage in forest conservation activities, cleaning parks, roads and mowing gardens in day nurseries in cooperation with local governments and NPOs.



Work scene in Kuraray Mirai no Mori (Kuraray Forest for the Future), Okayama Prefecture

Activities in Social Welfare Field

Aiming to support and continue the employment of people with intellectual disabilities and to undertake the Kuraray Fureai(Rapport) Fund-Raising Campaign, Kuraray's Kurashiki, Saijo, Niigata and Kashima Plants operated workshops and donated money raised in the campaign. Also, cherry blossom viewing parties were held at the Saijo and Niigata Plants tuned to the cherry blossoming season. Residents of nearby social welfare facilities visited the plants and enjoyed viewing cherry blossoms. These activities will be continued.

In cooperation with local welfare facilities, Kuraray has built workshops for people with disabilities to support their self-sustenance by providing employment opportunities.

In cooperation with Nakajo Town (currently Tainai City) and Niji no Ie (meaning "Rainbow House", operated by a social welfare corporation, Nanaho-kai), the Kuraray Workshop of Kuraray's Niigata Plant opened in 1997 for people with intellectual disabilities. The workshop sorts plastic waste generated in the production process for recycling and manufactures supplies and fittings. In 2007, the Himawari Sunflower Workshop opened at Kuraray's Saijo Plant. In 2011, the Kashima Plant opened its Aozora Blue Sky Works assisted by a social welfare corporation, Kamisu Keiai-en. 12 instructors and 36 workers now work at four of Kuraray's plants to accomplish a variety of job assignments, including those employees at Kuraray's Kurashiki Plant engaged in cleaning of uniforms and labeling on Kuraray products. They mingle with

Kuraray's employees through sports events and other occasions. These workshops and employment of those with intellectual disabilities will be maintained and continued.



Workshop in Kurashiki Plant

	Types of Work
Kurashiki	Cleaning uniforms, labeling products
Saijo	Product recycling, cleaning uniforms
Niigata	Product recycling, manufacture of pot stands and aprons, cleaning uniforms
Kashima	Making double-ply product packing bags, separating foreign matter in products

Topics 2016



(Photo through courtesy of JOICFP)



(Photo through courtesy of JOICFP)



(Photo through courtesy of JOICFP)

The "Sending School Backpacks Across the Sea" Campaign

"Sending School Backpacks Across the Sea" is an international contribution activity in which elementary school children in Japan send used school backpacks to children in Afghanistan and other areas, who are deprived of education opportunity by war. The backpacks are donated every year together filled with stationery and letters. Up to now, these backpacks have been sent to Afghanistan, Mongolia and Nepal.

On the 13th anniversary of the campaign that was launched in 2004, 7,732 school backpacks were donated in Fiscal 2016 from various parts of Japan. In cooperation with JOICFP, a public interest incorporated foundation, the school backpacks were sorted and packed by volunteer groups and the employees of Kuraray Group. From October to December the school backpacks were sent to 11 elementary schools in Nangarhar Province, Afghanistan. Many volunteers cooperated in shipping them via oceans. So far, a total of 105,122 school backpacks have been sent as presents. Kuraray wishes to expand this contribution activity to other countries in the future.

FY	Number of Backpacks	FY	Number of Backpacks
2004	8,514	2011	11,144
2005	12,076	2012	8,326
2006	5,504	2013	6,396
2007	6,894	2014	7,908
2008	7,022	2015	7,111
2009	7,522	2016	7,732
2010	8,973	Cumulative total	105,122

We established the Kuraray Fureai Fund in July 1992. Under this fund, companies make donations consisting of those 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 social welfare programs.

In Fiscal 2016, activities were undertaken contributing to local communities such as donating nursing care supplies, books and other articles mainly to welfare facilities, local governments and schools in the neighborhoods of Kuraray plants. The fund will be continuously used for the sake of social welfare.



Kuraray Library financed by Kuraray Fureai Fund (Saijo Plant)

History of Kuraray's CSR Procurement Activities

Promotes Green Procurement to Business Partners (2002~)

Under the Kuraray Group Action Guidelines for the Global Environment (established in 1993), we formulated our Green Procurement Standards in 2002 to promote global environmental preservation with the cooperation of our business partners. We also distributed a booklet comprising the above standards to around 800 key business partners and evaluated the status of initiatives at each company by way of a checklist.

Develops into CSR Procurement (2005~)

In 2005, we formulated the Kuraray CSR Procurement Policy based on the 10 principles of the United Nations Global Compact, which are both international and universal. This policy has become more comprehensive than before as it has added sections on "Respect for human rights and individuality" and "Compliance" to the "Promotion of Green Procurement" section. We requested the understanding of this policy from business partners and grasped the CSR procurement status of around 700 key business partners by conducting questionnaires about CSR procurement. Following the survey, we provided feedback and improvement requests to business partners in Japan with some problems.

CSR Procurement Policy of Kuraray

- Respect for Human Rights**
  - 1 Respect for Human Rights
  - 2 Observance of the International Labor Organization's core labor standards
    - Guarantee of the right to organize and the right to collective bargaining
    - Prohibition of compulsory labor
    - Prohibition of child labor
- Compliance**
  - Compliance policy
  - Compliance systems
  - Compliance education program
- Promotion of Green Procurement**
  - Preparation of environmental policies and environmental reports
  - Green procurement implementation plan and implementation apparatus
  - ISO14001 certification
  - Education and awareness campaign for green procurement

Continuation of CSR Procurement - 2016 Onward

The Kuraray Group will continue to check the CSR procurement activities of suppliers before purchases are made from new suppliers.

In purchases of equipment and materials, a system has been built allowing checks of CSR procurement activities of suppliers through the Internet by renovating the purchasing system. This system will allow a more precise understanding of purchasing situations of suppliers.

Kuraray's Activities for Purchases of Green Commodities

In 2002, Kuraray set its Green Procurement Guidelines for purchases of 107 items in nine product categories needed for its business operations, including stationery, office equipment and automobiles. Since then, the Kuraray Group has been undertaking activities to preferentially and actively purchase Green Commodities that are low in environmental load. These activities will continuously be undertaken.

Social Interaction

Kazuhiko Kugawa, Director, Primary Executive Officer

Kuraray is the manufacturer of CLARINO®, artificial leather. CLARINO® has a market share of more than 70% as a material for school backpacks. Beginning in 2004, the activity "Sending School Bags across the Sea Campaign" has been kicked off to present used school backpacks to children of Afghanistan in response to the voices of children and their parents who donated school bags to give these bags a second lease of life. In Fiscal 2016, the activity marked its 13th anniversary. We are very glad that as many as 100,000 school bags have crossed the sea to be delivered to the

children of Afghanistan in the past years. I witnessed the sorting of school bags for Fiscal 2017 the other day as a volunteer while cherry trees were in full bloom. About 7,000 school bags will travel to Afghanistan this year also.

Above all, the continuation is of paramount importance for social contribution activities such as "Sending School Bags across the Sea Campaign". Steady efforts will be continued.

## Governance and CSR Promotion Structure

### Corporate Governance Structure

Kuraray considers it is vital and necessary not only to maintain sound relations with our various stakeholders including our shareholders, to assist the improvement of our performance and sustainable growth as a company but also to implement corporate governance to fulfill our responsibility to society.

Kuraray in Fiscal 2003 separated supervision and business execution by reinforcing its board of corporate auditors by increasing the number of outside auditors, setting up a management advisory council, shortening the terms of office of directors, introducing an executive officer system and other measures. From Fiscal 2008, outside directors have been elected. These measures contributed to putting corporate governance into effect. In Fiscal 2015, the Basic Policy for Establishment of Internal Control System was amended to strengthen the governance system for Kuraray Group.

 **Corporate Governance Report**  
[http://www.kuraray.co.jp/ir/strategy/pdf/governance\\_170404.pdf](http://www.kuraray.co.jp/ir/strategy/pdf/governance_170404.pdf)

### CSR Promotion Structure

In 2003, Kuraray set up CSR Committee by integrating Social Environment Committee and In-house Ethics Committee, and bolstered its CSR promotion structure on a Group level. Three committees of experts (Social Responsibility and Economic Subcommittee, Environmental and Industrial Safety Subcommittee, and Risk Management and Compliance Subcommittee) are organized under CSR Committee. Nine working teams are organized in each committee of experts. These committees of experts and working teams study company-wide policies and targets and propose them to the management. Departments, that are responsible for special issues, constituting these committees and working teams collaborates with various organizations in Kuraray Group in addressing respective theme in accordance with company-wide CSR policy. We will reorganize the structure and the operation system of the CSR committee in 2017, aiming at the more workable CSR implementing body.

### Risk Management

Within the Kuraray Group, the President formulates and conveys a Group policy on risk management to the entire organization each year. This policy consists of two parts, namely, a long-term and continuous "basic policy" embracing overall Group risk management and "annual themes" that are dealt with in each fiscal year in light of social situations and trends of the Kuraray Group and other companies. This system allows flexible and prompt actions to be taken against changes in the risk environment while maintaining the basic approach in responding to risks.

The Kuraray Group's risk management is characterized by a two-tier approach to risk management: "vertical" and "horizontal" risk management. In vertical risk management, the business units, divisions, offices, plants and affiliates identify risks facing their individual organizations, evaluate such risks by themselves and appropriately devise and implement actions and measures to be taken. In horizontal risk management, the corporate staff department evaluates and conducts cross-sectional management

of pure risks such as natural disasters and infringement of laws and regulations that cause only negative impacts when such risks take place.

Additionally, critical risks selected from all these risks that need to be managed on the company management level are extracted and actions and measures are taken on them on a priority basis.

### Quality Management

Within Kuraray Group, quality management is carried out by implementing quality management systems such as ISO 9001 at each manufacturing site. The divisions have built a mechanism for each of their businesses to supply products that incorporate the requirements of customers. The corporate CSR Division undertakes activities aiming at reinforcing quality management within the entire group.

Among Kuraray's divisions, the EVAL Division beginning Fiscal 2012 and GENESTAR Division beginning Fiscal 2015 have been continuing their ICS activity aimed at enhancing customer satisfaction such as by undertaking a cross-sectional improvement activity.

As a new initiative, beginning Fiscal 2016, a scheme called "Saiteki Activity(meeting to discuss quality management)" was launched. Under this scheme, the divisions and CSR Division together verify the current statuses of and improvements made in quality management at the divisions. The scheme enables checking of common items to be reinforced with respect to quality management of the entire Kuraray Group, triggering improvement activities involving all the divisions.

As part of this scheme, the seminar aimed at improving the quality of automotive materials was hosted.

In Fiscal 2016, Kuraray Group quality handbook was compiled to share the concepts "quality as contemplated by Kuraray" and "quality is customer satisfaction" based on the company statement of the Kuraray Group. Furthermore, companywide education was launched using this handbook.

### Handling of Product Complaints

Within Kuraray Group, information on complaints and claims received from the customers is managed by its divisions, so responses to customers can be promptly made and action is taken swiftly to prevent the recurrence of same flaws. Material complaints and claims are handled in accordance with the "Regulations on Product Liability-related Accident Response and Quality Complaint Report." In Fiscal 2016, no product recalls or accidents that cause severe damage to health or damage to property such as fire were reported.

## Compliance

### Basic Approach to Compliance

"Our Commitment" states the principles of our conduct with which we should observe in doing our business. "Kuraray Group Code of Conduct" serves as guidelines to implement the commitment in performing day-to-day work. Top management of Kuraray Group has declared that we will comply with laws and regulations and "Our Commitment" under any circumstances. In order to share these principles and commitments among all Kuraray Group personnel throughout the world, Compliance Handbook has been compiled containing the foregoing declaration by the top person and explanations of "Kuraray Group Code of Conduct."

In order to disseminate these principles and commitments among all Kuraray Group employees, a compliance handbook has been distributed to the Group employees throughout the world. The handbook contains the foregoing declaration by the top executive and explanations of the Kuraray Group Code of Conduct and is written in eight languages, Japanese, English, German, Chinese, Hangul, Russian, Flemish and Czech.

We plan to appoint compliance officers at Plants, Offices and Laboratories of Kuraray and group companies and to organize a compliance committee in each region to effectively and sustainably promote and implement compliance activities within the group as a whole.

### Whistleblower System

As a whistleblower system to prevent and to identify and troubleshoot any compliance violation at an early stage, Kuraray Group Employee Counseling Room has been set up for all employees of domestic Kuraray group including part-time employees, contract employees and dispatched staffs. Whistleblower contact windows are also provided at major subsidiaries in Europe and North America. In recent years, globalization of Kuraray Group has accelerated rapidly through M&A and other activities and the group is building a system at subsidiaries that do not have such contact windows yet, allowing all employees of the group inside and outside Japan to access a contact window.

Number of Consultations at Kuraray Group Employee Counseling Room

FY	2012	2013	2014	2015	2016
Number of Consultations at Kuraray Group Employee Counseling Room	5	1	1	3	4

## Actions Taken for More Thorough Compliance with the Law

In March 2016, the Fair Trade Commission of Japan made an on-the-spot inspection of Kuraray, involving competitive bidding on textile products purchased by the Acquisition, Technology and Logistics Agency, Defense Ministry.

Subsequently, in March 2017, the commission ruled that Kuraray had violated the Anti-Monopoly Law and issued a cease-and-desist order. Responding sincerely to this fact, Kuraray has implemented the following measures to enable each of the officers and employees of the Kuraray Group to more thoroughly comply with the laws and regulations.

Nevertheless, in February 2017, the Fair Trade Commission of Japan made an on-the-spot inspection again at Kuraray on the manufacture and sale of activated carbon used in water purification facilities, waste incinerators and other facilities. We take the series of these events seriously and sincerely and will implement all necessary measures to ensure such incidents will never recur, as we fully cooperate with the inspection by the commission and will clarify the points that should be improved on the following aspects and will reinforce the countermeasure.

### Status of Activities

#### [Message from Top Executive]

In response to the on-the-spot inspection by the Fair Trade Commission of Japan, the top executive issued a message to all the officers and employees of the Kuraray Group instructing stricter compliance with the Anti-Monopoly Law. The message from the top executive was posted on Kuraray's intranet, bulletin boards and other places in order to ensure information dissemination and stricter compliance.

#### [Amendment of Guidelines on Compliance with the Anti-Monopoly Law]

To assist and ensure more thorough compliance with the Anti-Monopoly Law, Kuraray's Guidelines on Compliance with the Anti-Monopoly Law were newly published, adding an easy-to-understand explanation of those matters that should receive attention in accomplishing routine work as viewed from a global perspective. The newly published guideline handbook was distributed to the officers and employees of Kuraray and related parties in Japan. In the light of the violations and other cases, all the divisions checked their transactions thoroughly.

#### [Enlightenment, Education and Training]

An outside expert was invited to seminars held by Kuraray on the Anti-Monopoly Law attended by the sales personnel of Kuraray, as well as all the managerial personnel in the Tokyo and Osaka Head Offices. All the Kuraray employees in Japan received a course of e-learning lessons to further raise their awareness about compliance with the laws and regulations.

#### [Creation and Updating of Rules]

A variety of measures have been implemented including a revision of the employment rules with an emphasis on compliance with laws and regulations and the setting of new rules of contact in dealing with other companies in the same trade.