

# **KYOWA KIRIN**

The English edition of the Kyowa Hakko Kirin Group Sustainability Report is distributed online only.

#### Kyowa Hakko Kirin Group Sustainability Report 2008 Highlights

This report introduces the social contribution and environmental activities of the Kyowa Hakko Kirin Group, which was launched in October 2008 following the merger of Kyowa Hakko Kogyo and Kirin Pharma.

Special Features-1
Kyowa Hakko Kirin opens up the future of therapeutic antibodies.

Special Features-2
How Kyowa Hakko Kirin's MR\* activities enhance patient satisfaction.

\*Medical Representative

Special Features–3
Introducing L-citrulline, a new food ingredient with a range of health benefits.

Corporate Governance
Kyowa Hakko Kirin's fundamental approach to corporate governance.

Corporate Governance
Activities to ensure the safe provision of pharmaceuticals.

Social Performance
A selection of highlights showing Kyowa Hakko Kirin's emphasis on strong community relations.

Social Performance
A report on a stakeholder meeting at the Takasaki Plant.

Environmental Performance
A special feature on global warming prevention activities and results.

Environmental Performance
Preventing water pollution with a new phosphoric acid recovery process.
Helping clean the air through significant advances in SOx emissions reduction.

#### ■Editorial Policy

Kyowa Hakko Kirin Group was launched in October 2008 following the merger of Kyowa Hakko Kogyo and Kirin Pharma, and Kyowa Hakko Kirin Group Sustainability Report 2008 is the first sustainability report issued by the new company. In the first half of the report, we cover the direction that the Kyowa Hakko Kirin Group will pursue in its future activities. In the second half we cover environmental and social performance, focusing on Kyowa Hakko Group companies Kyowa Hakko Kogyo Co., Ltd., Kyowa Hakko Chemical Co., Ltd., Kyowa Hakko Food Specialties Co., Ltd. and the domestic consolidated production subsidiaries listed on Page 3. As a rule, in this report we use company and business site names and job titles effective from October 1 onward; however, we use previous terminology in places, such as the Stakeholder Meeting section.

In July 2008, we held a stakeholder meeting at the Takasaki Plant with the aim of enhancing report concept development and content. We obtained third-party verification to improve the reliability of information contained in the report and also obtained the opinion of an expert in the field about the overall concept of the report, which we have included in the report.

In compiling this report, we referred to the Environmental Reporting Guideline of the Ministry of the Environment and the Responsible Care Code. From the viewpoint of corporate social responsibility (CSR), we have also included material concerning corporate governance, corporate ethics, interaction with society and communities, voluntary initiatives by employees and the social significance of our business operations.

#### ■Scope of the Report

The information contained in this report covers production, sales and R&D sites in Japan as well as production and development sites in other countries (Pages 3, 4). Environmental load and social performance data were gathered from Kyowa Hakko Group production and R&D sites in Japan and production sites overseas (Biokyowa, Shanghai Kyowa Amino Acid, Wuxi Xiehe Food and Kyowa Foods (Jiangyin)). Green Office Plan data for sales sites in Japan have been integrated. To maintain continuity with past data, we have recorded separately the environmental activities of Daiichi Fine Chemical, which joined the Group on June 1, 2007, and have recorded only in the site data on Page 39 data for the Kirin Pharma Takasaki Plant, which became a consolidated subsidiary on April 1, 2008.

#### ■Period Reported

The periods covered by the report are fiscal 2007 (April 2007 to March 2008) for operations in Japan and calendar 2007 (January to December) for overseas operations. Data for fiscal 2008 are included in some results.

Linkage with the Corporate Website

http://www.kyowa-kirin.co.jp/english

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#### ★ The Establishment of the Kyowa Hakko Kirin Group

October 1, 2008 marked the launch of Kyowa Hakko Kirin Co., Ltd., the result of a merger between Kyowa Hakko Kogyo Co., Ltd. and Kirin Pharma Company, Limited.

#### ★ Vision

To create a Japan-based, leading world-class Japanese research and development-centered life sciences company focusing on pharmaceuticals with a firm foundation in biotechnology.

#### ■ Corporate Data (As of October 1, 2008)

Corporate Name Kyowa Hakko Kirin Co., Ltd.

Established October 1, 2008 Paid-in Capital ¥26,745 million

President and CEO: Yuzuru Matsuda Representative

Head Office 1-6-1, Ohtemachi, Chiyoda-ku, Tokyo 100-8185, Japan

TEL: +81-3-3282-0007

Number of Employees 7.917 (Consolidated), 3.707 (Non-consolidated)

(As of June 30, 2008, Kyowa Hakko)

Principal Consolidated

Subsidiaries Kyowa Hakko Bio Co., Ltd., Kyowa Hakko Chemical Co., Ltd.,

Kyowa Hakko Food Specialties Co., Ltd.

**Industry Segment** 

• Pharmaceuticals: Manufacture and sale of pharmaceuticals and clinical diagnostic reagents

• Bio-Chemicals : Manufacture and sale of pharmaceutical and industrial-use raw materials,

health care products, agrochemicals, products for livestock and fishery

industries and alcohol

Chemicals : Manufacture and sale of solvents, plasticizer raw materials and

specialty chemicals

Food : Manufacture and sale of seasonings, baking ingredients and products,

such as premixes

Other : Wholesaling and transportation

#### Kyowa Hakko Kirin Co., Ltd.

In the Pharmaceuticals business, by drawing fully on core antibody technologies and other leading-edge biotechnologies in the fields of cancer, the kidneys, and immunologic diseases, continuously creating groundbreaking new drugs, and engaging in development and marketing around the world, Kyowa Hakko Kirin aims to become a Japan-based global specialty pharmaceutical company that subsidiary contributes to the health and well-being of people worldwide.



## Kyowa Hakko Bio Co., Ltd.

In the Bio-Chemicals business, by taking full advantage of world-class fermentation technologies, with a central focus on amino acids, and engaging in development, production, and marketing around the world, Kyowa Hakko Bio aims to be a leader in the fermented products market and contribute to the health and well-being of people worldwide.

#### Kyowa Hakko Chemical Co., Ltd.

Kyowa Hakko Chemical places importance on product creation that is environmentally friendly and in harmony with the Earth.

#### Kyowa Hakko Food Specialties Co., Ltd.

Kyowa Hakko Food Specialties pursues superior flavor and customer confidence and peace of mind from the very starting point of food.

On April 1, 2009 Kyowa Hakko Food Specialties Co., Ltd. and Kirin Food-Tech Company, Limited will merge to form Kirin Kyowa Foods Company, Limited (food business integration).

#### **■**Business Bases

#### **Production Bases**

#### <In Japan>

#### Kyowa Hakko Kirin Co., Ltd.

• Fuji Plant, Sakai Plant, Yokkaichi Plant, Ube Plant, Takasaki Plant

#### **Principal Consolidated Subsidiaries**

- Kvowa Hakko Bio Co., Ltd. Yamaguchi Production Center Hofu. Yamaguchi Production Center Ube, Healthcare Tsuchiura Plant
- Kyowa Hakko Chemical Co., Ltd. Chiba Plant, Yokkaichi Plant
- Kyowa Hakko Food Specialties Co., Ltd. Tsuchiura Plant

#### Other Consolidated Subsidiaries

- Kyowa Medex Co., Ltd. Fuji Plant
- Daiichi Fine Chemical Co., Ltd. Headquarters Plant (Takaoka, Toyama)
- Ohland Foods Co., Ltd. Chiba Plant, Tsuchiura Plant
- Kyowa F. D. Foods Co., Ltd. (Hofu, Yamaguchi)

#### <Outside Japan>

#### Kyowa Hakko Kirin Co., Ltd.

• Kirin Kunpeng (China) Bio-Pharmaceutical Co., Ltd. (Shanghai, China)

#### Kyowa Hakko Bio Co., Ltd.

- Biokyowa Inc. (Missouri, U.S.A.)
- Shanghai Kyowa Amino Acid Co., Ltd. (Shanghai, China)

#### Kyowa Hakko Food Specialties Co., Ltd.

- Wuxi Xiehe Food Co., Ltd. (Wuxi, China)
- Kyowa Foods (Jiangyin) Co., Ltd. (Jiangyin, China)
- Qingdao Kyowa Wanfu Foods Co., Ltd. (Qingdao, China)

#### **Principal Laboratories**

Kirin Holdings 50.10%

subsidiary

Company,

Limited

#### <In Japan>

#### Kyowa Hakko Kirin Co., Ltd.

• Fuji Research Park (Fuji Plant/Shizuoka), Tokyo Research Park (Machida, Tokyo), Frontier Laboratory (Takasaki, Gunma), Bio Process Research and Development Laboratories (Takasaki Plant/Gunma), Drug Formulation Research and Development Laboratories (Fuji Plant/Shizuoka), Chemical Process Research and Development Laboratories (Sakai Plant/Osaka)

#### Kyowa Hakko Bio Co., Ltd.

• Technical Research Laboratories (Yamaguchi Production Center/ Yamaguchi), Tsukuba Development Center (Tsukuba, Ibaraki)

#### Kvowa Hakko Chemical Co., Ltd.

Yokkaichi Research Laboratories (Yokkaichi Plant/Mie)

#### Kyowa Hakko Food Specialties Co., Ltd.

• Food Creation Center (Tsuchiura Plant/Ibaraki)

#### Kyowa Medex Co., Ltd.

• Research Laboratories (Fuji Plant/Shizuoka)

#### <Outside Japan>

#### Kyowa Hakko Kirin Co., Ltd.

- Kyowa Pharmaceutical, Inc. (New Jersey, U.S.A.)
- BioWa, Inc. (New Jersey, U.S.A.)
- Kirin Pharma USA, Inc. (California, U.S.A.)
- Kvowa Hakko U.K. Ltd. (Berkshire, U.K.)
- Hematech, Inc. (South Dakota, U.S.A.)

#### **Principal Sales Bases**

#### <In Japan>

#### Kyowa Hakko Kirin Co., Ltd.

• Headquarters, Sapporo, Tohoku, East-Tokyo, West-Tokyo, Chiba-Saitama, North Kanto, Koshinetsu, Yokohama, Nagoya, Tokai, Osaka, Keiji-Hokuriku, Kobe, Chugoku, Shikoku, Fukuoka and South-Kyushu branches

#### A Message from the President



#### The Birth of the Kyowa Hakko Kirin Group

The Kyowa Hakko Kirin Group, launched on October 1, 2008, aims to be a Japan-based, world-class R&D-driven life sciences company focusing on pharmaceuticals with a firm foundation in biotechnology. In the Pharmaceuticals business, we aim to be a global specialty pharmaceutical company that focuses on therapeutic antibodies. In the non-pharmaceuticals businesses, we aim to be a leading global player by pursuing business integration and alliances within the new organizational framework.

Today, we cannot expect conventional approaches of recent decades to guide us successfully through the unprecedented developments in our future. In Japan, birthrate decline and population aging are proceeding at the world's fastest pace. Furthermore, as the global environment worsens, we see the beginnings of a world-wide scramble for resources, energy and food. Business conditions within our core Pharmaceuticals business are becoming increasingly challenging. We must recognize and face the true reality head-on to create a winning scenario for Group growth and development. Success or failure in the Pharmaceuticals business will hinge on our ability to consistently release new drugs and to establish a competitive presence overseas. We cannot survive unless

we are truly a world-class company. Kyowa Hakko and Kirin Pharma have both voluntarily entered the tie-up that has become Kyowa Hakko Kirin. Both managements saw that by working as one, rather than independently, we would realize the potential to engage in aggressive, proactive business—gaining speed and resources to shape much of our own business environment rather than passively reacting to external changes made by others.

#### Aiming to Be a Leading Global Player

Around 1981, Kyowa Hakko was among the first companies to focus attention on monoclonal antibodies. By consistently pursuing research and development over many years, we have gained a globally advantageous position in therapeutic antibodies. Additionally, we have extended the leadership of our capabilities to produce highly active human antibodies, by combining Kirin Pharma's KM Mouse® technology for efficiently creating fully human antibodies and Kyowa Hakko's POTELLIGENT® and COMPLEGENT™ technologies for producing highly active antibodies. At a time when therapeutic antibodies are attracting attention around the world, our potential to become a global leader in this field can only increase. I aspire to overcome adversity and become a leading

global player by firmly resolving to place importance on teamwork and the joint realization of a common dream.

In the Bio-Chemicals business, a Group flagship business closely connected with the Pharmaceuticals business, we maintain production bases in Japan, the U.S. and China and are aggressively pursuing global business development. The foundation of our global business activities is biotechnologies applied in amino acids for infusions, pharmaceutical raw materials and intermediates, and medical foods in addition to bulk pharmaceuticals. In the Food business, I am confident that the integration with Kirin Food-Tech, which is scheduled to occur in April 2009, will enable us to draw up a dynamic strategy to make the Food business the fourth mainstay business of the Kirin Group, with business activities that extend beyond Japan to Asia and Oceania. The very beginning of Kyowa Hakko was our entry into the Chemicals business with the production of acetone and butanol by fermentation. In the coming years we will engage in a business that truly meets the needs of the times, producing chemical products that address global environmental problems that command worldwide attention.

#### A Company Is a Public Institution

With regard to the Kyowa Hakko Kirin Group's CSR activities, our business activities themselves are tightly incorporated within the social framework for the benefit of society. For instance, in the Pharmaceuticals business, our mission is to ease suffering from illness and to contribute to the health and well-being of people the world over. Our most important considerations in production activities, regardless of our business area, are the protection of the local environment, protection of employees and harmonious coexistence with local communities.

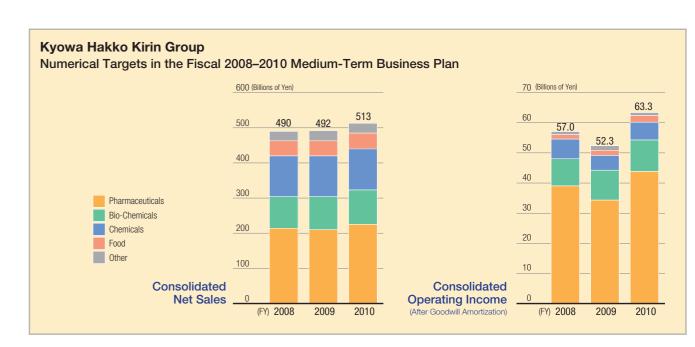
It is worth repeating here that the Kyowa Hakko Kirin Group will aim for highly transparent, fair and speedy management. We intend to place importance on our employees, while meeting shareholder expectations as a company that benefits society. I would like to ask for your understanding and cooperation in getting the new company off to a favorable start.

October 2008

Dr. Yuzuru Matsuda
President & Chief Executive Officer

Kyowa Hakko Kirin Co., Ltd.

Marketa







Pharma will make possible the application of these

technologies to drug development using mouse-related technologies for producing human antibodies. We aim to

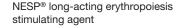
continue to utilize these technologies to deliver to patients still more therapeutic antibodies with high therapeutic effect.

taking maximum advantage of alliance synergy.

....

#### Principal Products of Kyowa Hakko Kirin







ESPO® recombinant human erythropoietin



ALLELOCK® tablets, an agent for the treatment of allergies



CONIEL® tablets, an agent for the treatment of hypertension and angina pectoris

# **Increasing Patient Satisfaction and Contributing** to Better Medicine throughout the Community

Yoshimasa Toqawa

9 KYOWA HAKKO KIRIN GROUP SUSTAINABILITY REPORT 2008

General Manager, Fukushima No. 1 Sales Office, Tohoku Branch, Kyowa Hakko Kirin

At the Fukushima No. 1 Sales Office, nine MRs cover hospitals in Fukushima Prefecture. Although the prefecture is divided into seven medical service areas, we focus MR activities on heavily populated Koriyama City, Fukushima City, Aizuwakamatsu City and Iwaki City areas, where there are many cancer-care hospitals and major hospitals that treat acute-stage illnesses. As the prefecture is geographically large, the MRs often travel for two

stage illnesses. As the prefecture is geographically large, the MRS often tra hours or longer to visit hospitals distant from the sales office.

The role of MRs is to accurately communicate to physicians information on drugs developed in-house and ensure the satisfaction of many patients and physicians through the effective use of the products. A number of factors have made the current business conditions in the hospital market extremely adverse for us. They include visit restrictions, fewer staff physicians, as physicians go into private practice, and the elimination of departments at hospitals in areas with declining populations. Nevertheless, the team is working with a positive attitude and high motivation.

When engaged in MR activities, there are always opportunities to strengthen relationships of trust with physicians. We will seize these opportunities and focus on engaging in speed-oriented MR activities, doing our utmost to contribute to community medicine by increasing patient satisfaction.

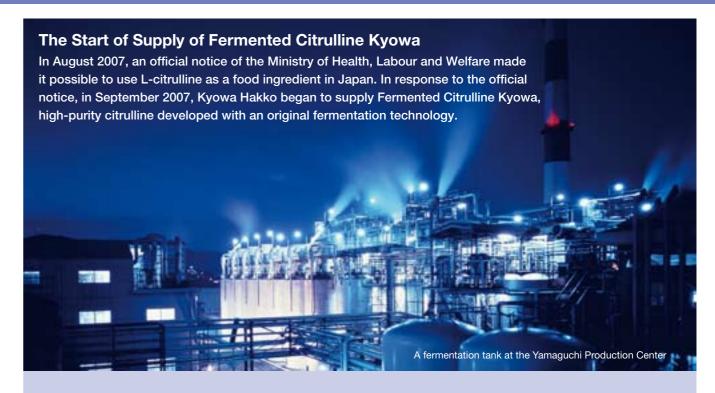


A meeting at the sales office



Organizing the latest product literature





# **Expectations for Health Improvement through the Supply of New Materials**

Miho Kizaki
Healthcare Products Development Center, Kyowa Hakko Bio

Citrulline is a free amino acid found in our bodies. It was discovered in water-melon juice by a Japanese researcher in 1930 and is known to be contained in watermelon in large quantities. Within the body, citrulline is involved in the production of nitrogen monoxide (NO) and functions to improve the body's circulation by, among other things, promoting vascular enlargement and blood flow promotion. Through the improvement of circulation, citrulline promotes metabolism and is expected to provide improvements for contemporary lifestyle-related health issues, including reduced chilling of the extremities, skin improvement and the maintenance of blood vessel health.

Citrulline was sold in the U.S. as a sports supplement, even before its use as a food ingredient became possible in Japan. In Europe, citrulline malate has been sold for more than 30 years as an OTC drug available without a prescription at ordinary pharmacies and drugstores. Japan's first health food product to contain citrulline went on sale in October 2007, and citrulline is expected to contribute to maintaining the health of countless people as a food ingredient in the years to come.

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#### **Corporate Governance**

#### The Basic Approach to Corporate Governance

In October 2007, Kyowa Hakko entered into a strategic alliance with the Kirin Group, and in October 2008 merged with Kirin Pharma to launch Kvowa Hakko Kirin. We have established the management organization and structures and are implementing the measures needed to realize the Kyowa Hakko Kirin vision of creating a "Japan-based, leading world-class Japanese research and development-centered life sciences company focusing on pharmaceuticals with a firm foundation in biotechnology." We recognize that increasing the transparency of management and strengthening management supervision are important for continuously increasing corporate value and work to enhance corporate governance.

Kyowa Hakko Kirin operates with autonomy and flexibility, while respecting the basic group policy of Kirin Holdings, maintains management independence as a listed company and strives to maximize shareholder interests and expand corporate value.

#### Strengthening Corporate Governance and Internal Control

The Board of Directors and the Board of Auditors are the foundation of Kyowa Hakko Kirin's system of management institutions. The Board of Directors consists of seven directors, of whom one is an outside director, and five corporate auditors, of whom four are outside corporate auditors (as of October 1, 2008). In accordance with audit policies determined by the Board of Auditors, the corporate auditors attend important meetings, including meetings of the Board of Directors. They also audit the performance of the directors' duties by surveying corporate operations and finances. The Company has established the Group Management Meeting and introduced an executive officer system to ensure efficient management decisions and rapid decision-making and has established the Advisory Board (consisting of four outside advisors) to strengthen the management structure

and increase management transparency and soundness.

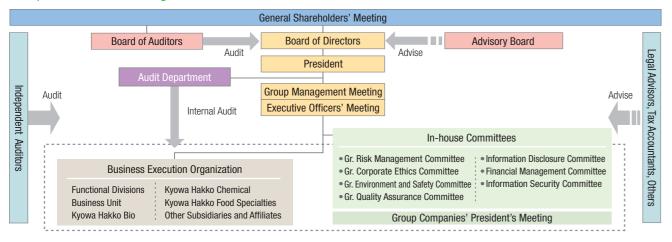
The Board of Directors periodically reviews its policies on system development to ensure the appropriateness of business operations (internal control systems), promote their progress and foster continuous system evolution. The Internal Audit Department, which controls internal auditing, works with the corporate auditors to conduct audits of business operations in the Kyowa Hakko Kirin Group with regard to compliance with laws, regulations and the Articles of Incorporation, and from the perspective of management efficiency. It reports the audit results and offers advice and proposals for improvements and greater efficiency.

#### Managing Risk through In-house Committees

Kyowa Hakko Kirin has in-house committees to deliberate on basic policies of management and develop responses to a variety of potential risk factors. These committees periodically report on their activities to the Board of Directors. The principal roles of the in-house committees are described below.

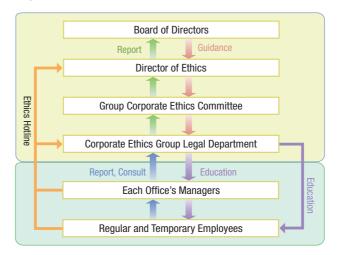
- Group Risk Management Committee: Deliberates on measures to implement group-wide risk management to identify potential management risks; Assess risks from a group-wide perspective and implements a risk response.
- Group Corporate Ethics Committee: Ensures and promotes legal and ethical behavior in order to earn the confidence of the general public; Formulates ethical codes of conduct for employees. Focuses on the soundness and appropriateness of the corporate activities.
- Group Environment and Safety Committee: One of the President's advisory groups, debates basic policies relating to environmental protection and safety
- Group Quality Assurance Committee: One of the President's advisory groups, focuses on basic quality assurance policies.
- Information Disclosure Committee: Deliberates on important matters relating to basic information policies and information disclosure.
- Financial Management Committee: Focuses on the efficiency of financing activities and discusses finance-related risks.
- Information Security Committee: Discusses basic policies relating to the protection and handling of confidential information.

#### **■**Corporate Governance Organization



#### Basic Policy and Implementation Structure

The Kyowa Hakko Kirin Group regards compliance as a top management priority and strives to ensure corporate ethics and promote awareness of corporate social responsibility through the development of a strong compliance system supported by education and awareness activities. The Group Corporate Ethics Committee has played a central role in the formulation of rules for employees, such as the codes of ethical conduct, and the establishment of the Ethics Hotline, an internal compliance-related reporting system. The Company has also established the Corporate Ethics Group Legal Department, a dedicated organization whose role is to ensure the observance of corporate ethics and compliance throughout the Group in Japan. The structure for promoting corporate ethics is shown below.



#### Establishment and Operation of a Hotline

The Ethics Hotline is a system available for use not only by corporate officers and employees, but also by occasional employees, part-time workers and temporary staff of Kyowa Hakko Kirin Group in Japan. It was launched as a system to resolve problems immediately through direct reporting to the Director of Ethics, if someone in the office is discovered to be behaving or planning to behave against the law. The system is being improved, with establishment of channels for reporting to outside advisors and the Corporate Ethics Group Legal Department and expansion of the methods of reporting.

We also strive to create an office environment that encourages hotline

use by putting up posters about the system and distributing a wallet card listing appropriate contact information

for all members who use the system.

Poster to familiarize employees in Japan with the hotline

#### **Education and Awareness Activities**

We emphasize education and awareness activities to ensure that all employees, including corporate officers, recognize the importance of corporate ethics and acquire correct knowledge about ethics. We engage in the following cornerstone education and awareness activities once each year.

**Corporate Ethics and Compliance** 

• Corporate ethics lectures: We hold lectures for corporate officers, business site directors, general managers and those who volunteer to help with audits. Depending on the specific topic, these lectures are conducted by attorneys, university professors or other outside instructors. The lectures are recorded on DVD and shown at gatherings held at individual business sites.

<Corporate ethics lectures held in 2008>

**Theme**: Consumer compliance and corporate ethics

(February 7)

Instructor: Mr. Takayuki Asami

Attorney at law

Nakajima Transactional Law Office

**Theme**: Dignity of organizations, dignity of individuals

(May 8)

Instructor: Ms. Mariko Bando

President

Showa Women's University

- Corporate ethics briefing sessions: We hold briefing sessions for all corporate officers and employees as part of the collective instruction conducted at individual business sites. The Corporate Ethics Group Legal Department conducts the briefings, and the topic changes each year.
- E-learning instruction: We provide ethical instruction centered on case studies for officers and employees, and 4,660 employees participated in fiscal 2007. Once a year, we use the e-learning system to conduct an ethics check (a monitoring activity) by which all officers and employees review their own day-to-day behavior.



Lecture by Ms. Mariko Bando, President, Showa Women's University

In addition to these activities, we continuously conduct department-level training about relevant laws, regulations and rules.

**Corporate Governance** 

#### **Quality and Safety of Pharmaceuticals**

#### The Mission of the Pharmacovigilance and **Quality Assurance Division**

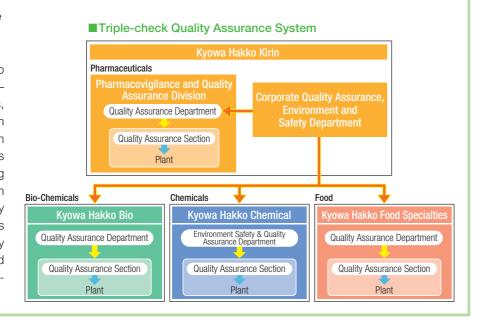
The Pharmacovigilance and Quality Assurance Division plays an important role with respect to our reliability as a pharmaceutical company, being responsible for the provision of customer safety and peace of mind. The division is in charge of research and development application dossier reliability assurance, quality assurance for pharmaceuticals produced at the plants, the collection of safety information to ensure appropriate use, and the communication of appropriate use information. It has become increasingly important to assure pharmaceutical reliability from a global perspective, and Kyowa Hakko Kirin's Pharmacovigilance and Quality Assurance Division has set forth as its mission "Excellent quality and reliable information befitting a global specialty pharmaceutical company."

■Pharmaceutical Quality and Safety Assurance Framework

#### Ministry of Health, Labour and Welfare Pharmaceuticals and Medical Devices Agency Instructions and guidance Marketing supervisor-general Departments that implement safety management (branches, etc.) Safety management implementation supervisor Safety management Quality assurance department supervising department Safety management supervisor Quality assurance supervisor Quality information Safety management information collection Reporting of quality information provision, instructions etc. Manufacturer Kyowa Hakko Kirin Healthcare practitioners (physicians, pharmacists, etc.) Other company

#### **Group Quality Assurance**

The Kyowa Hakko Kirin Group consists of four business fields-Pharmaceuticals, Bio-Chemicals, Chemicals and Food. We maintain a triple-check system to confirm that quality assurance systems function properly by maintaining quality assurance units at each manufacturing site (plant), quality assurance units for each business field and the Corporate Quality Assurance, Environment and Safety Department, which provides group-wide audit support.



#### Pharmaceutical Quality and Safety Assurance

Pharmaceutical companies that sell pharmaceuticals are required under the Pharmaceutical Affairs Law to employ a marketing supervisor-general and to appropriately practice post-marketing safety management and quality management in accordance with Good Vigilance Practice (GVP) and Good Quality Practice (GQP) standards. Violation of the Pharmaceutical Affairs Law results in business license revocation or the partial or complete suspension of business.

Kyowa Hakko Kirin strives to ensure pharmaceutical quality and safety on the basis of close collaboration among departments in accordance with the framework in the chart below.

#### Relations with Shareholders and Investors

The Kyowa Hakko Kirin Group regards investor relations as an important management priority and endeavors to provide shareholders and investors with business information in a manner that is timely, appropriate and fair. We have established a disclosure policy to ensure the information benefits our customers, employees, society, shareholders, investors and other stakeholders. Our aim is to communicate a wide variety of information about the Kyowa Hakko Kirin Group as one element of sincere and highly transparent management.

#### **Disclosure Policy**

Based on the principles of transparency, fairness and consistency, Kyowa Hakko Kirin strives to provide timely, accurate disclosure of information to shareholders and other investors in accordance with the Financial Instruments and Exchange Law and the timely disclosure rules of the Tokyo Stock Exchange (TSE). In addition, Kyowa Hakko Kirin is committed to the timely and active disclosure of other information that, in the judgment of the Company, will be effective in helping shareholders and other investors to understand Kyowa Hakko Kirin. (Amended October 2008)

#### ■ Analyst Meetings

Kyowa Hakko Kirin holds meetings at which the CEO explains to institutional investors, securities analysts and mass media representatives the financial results for the interim period and fiscal year. Interested parties unable to attend the meetings may obtain accounts of the meetings from the Kyowa Hakko Kirin website for shareholders and investors. The CEO and other corporate executives strive to actively disclose business information at all times and the CEO visits overseas investors each year.

#### Kyowa Hakko Kirin Website for Shareholders and Investors http://ir.kyowa-kirin.co.jp/english/



Analyst meeting on financial results held on April 30, 2008

#### ■ Reports for Shareholders and Investors

—"To Our Shareholders" and the Annual Report— Kyowa Hakko Kirin sends the report "To Our Shareholders" (formerly the business report) to shareholders twice a year and posts the report on its website for viewing by investors other than shareholders. We distribute a printed Englishlanguage annual report to overseas investors and post the English version and Japanese version of the report on the corporate website.

**Investor and Partner Relations** 

#### **Inclusion in Socially Responsible Investment Indices**

Kyowa Hakko has been included in the FTSE4Good Index Series of socially responsible investment indices.



Certificate of inclusion in the FTSE4Good Index Series

#### Relations with Business Partners

#### ■ Green Procurement Guidelines

In August 2008, we reviewed the green procurement guidelines that apply to business partners from which Kyowa Hakko Kirin procures raw materials, parts, office supplies, equipment, fixtures, facilities and other items. In the review, we placed importance on the eco-friendliness of products. In addition to previous environmental management activities assessment items, we added to the purchased goods ecofriendliness items, concern about energy conservation and resource conservation, the use of recycled materials and materials containing a high proportion of recycled products, and the use of materials that simplify waste processing and disposal and facilitate recycling.

#### **Employee Relations (Kyowa Hakko)**

#### **Employee Training**

In fiscal 2007, Kyowa Hakko aimed to achieve a corporate culture characterized by solutions and speed, autonomy of businesses and individuals, outgoingness and openness and devotes considerable effort to human resource development. Employee training is broadly divided into rank-based training, upper management training and support for employee upskilling. There are also numerous programs specific to individual business operations, including business upskilling courses. Kyowa Hakko Kirin regards human resource development as a key management priority and will continue to enhance and strengthen programs in this area.

	Rank-Based Training	Executive Management Training	Support for Employee Upskilling
Management Executives  New Employees Prospective Employe	Evaluator training  New manager training  Evaluee training  Leadership training  Facilitation training  Basic strategy training  Career development  training  Next-generation  leadership training  Basic logic training  New employee training  Prospective employee  training	Training for staff on outside assignments Management strategy training	Overseas study programs Distance learning programs English conversation programs TOEIC exam program

#### Mission & Action for Progress (MAP) System

In April 2005, Kyowa Hakko radically revised its existing skill-development programs and introduced a management tool named the "Mission & Action for Progress" (MAP) system. The aim of this management approach was to speed up the achievement of operational priorities through appropriately repeated plan-do-see (PDS) cycles. The MAP system is used as a tool to promote communication between employees and supervisors. Work targets and expectations about approaches to work were clearly defined and result assessments clearly explained.

## Active Challenge System (Internal Job-posting Program)

In fiscal 2007, Kyowa Hakko operated an internal job-posting system and a free-agent (FA) system for its employees. Job details were posted on an internal website. The aim of this recruitment method was to match the needs of the work-place with the ambitions and career goals of employees.

#### **Award System**

Kyowa Hakko presented a variety of awards, including the President's Awards and awards for inventions, in recognition of especially meritorious achievement by employees in fiscal 2007. Employees who have made significant contributions in the areas of the environment, safety or quality are also recognized under this system.



President's Award ceremony (July 9, 2008)

#### Childcare Support Measures

Out of desire to provide childcare support for employees, Kyowa Hakko has prepared the following programs jointly with the labor union for study and sequential implementation.

- Enhancement of the system providing reduced working hours for childcare (implemented in 2007)
- Active publicizing of internal systems, information provision and development of a consultation system (implemented in 2007)
- Assistance for childcare service expenditures (implemented in 2008)
- Extension of the childcare leave application period (implemented in 2008)
- Introduction of follow-up tools for employees who take childcare leave (implementation planned for 2008)

#### **Employment of Workers with Disabilities**

Kyowa Hakko's rate of employment of people with disabilities was 2.02% in June 2007, exceeding the 1.8% standard in the Law for Employment Promotion, etc. of Persons with Disabilities. Kyowa Hakko employed 85 disabled people (as of March 2008; one person with severe disabilities is counted as two persons employed) and it planned to receive a disabled persons employment adjustment allowance. Kyowa Hakko Kirin will continue to implement workplace environment improvements consistent with the aptitudes and lifestyles of individual employees.

#### Labor-management Communication

In fiscal 2007, both management and labor recognized the importance of communication as the basis of labor-management relations in Kyowa Hakko, and there was a shared commitment to problem solving through proper consultation. The key forums for labor-management communication were the Management and Union Communication Councils at central and site levels, which served discussion of issues relating to corporate management and operational policies. The forum for consultation on salaries and working conditions was the



Central Management and Union Communication Council

Remuneration Committee. For smooth labor-management communication, meetings of the Management and Union Communication Councils and Remuneration Committee were held to resolve important management issues from time to time. Labor and management worked together in the spirit of cooperation to ensure the survival and growth of business operations as the source of employment.

#### Mental Health Initiatives

Since 2007, on the basis of the General Outline for Measures to Create Lively Workplaces, which focuses on mental health, Kyowa Hakko implemented comprehensive measures based on four types of mental health care: self-care, care provided by line managers, care provided by industrial physicians and healthcare staff and care utilizing external resources. For the maintenance and promotion of mental health, it implemented line-care training and self-care training, and conducted stress diagnosis for all employees and provided feedback to enable individual employees to implement stress countermeasures. As of April 1, 2008, 35 employees have obtained industrial counselor qualifications and act as mental health promoters in workplaces.

#### Mental Health Self-care Promotion Activities



Compensation and Benefits Group
Human Resource Department
Kyowa Hakko Kirin

At the head office, we have conducted 16 self-care explanation sessions with the aim of preventing mental disorders. The subject matter of the sessions focuses on deepening understanding of stress and depression among individual employees and imparting knowledge of mental disorder prevention methods, early detection methods and countermeasures for people suffering from disorders. I think that at the sessions character analysis (Transactional Analysis egogram) results received the greatest reaction from participants. This was the first

year for the sessions, and we will be delighted if participants become aware of mental health-related matters and benefit in ways such as learning techniques for preserving mental health, quickly becoming aware of indications of mental disorders, or taking advantage of consultation services.

In recent years, awareness of mental health self-care has spread considerably. I hope that people consider how to preserve their mental health, just as they do their physical health, and that each individual proactively discovers methods of maintaining mental health.

Participants at the explanation sessions filled out a questionnaire and offered various opinions, including "I wish you had conducted this explanation session earlier," "I was surprised at the courteousness of the company's support structure," and "I would like more in-depth training." We plan to reflect these opinions in upcoming linecare training and self-care training.

Let's work together to create workplaces where everyone can work in excellent physical and mental health.

Social Performance

#### Occupational Safety and Health (Kyowa Hakko)

#### Occupational Safety and Health Management Systems

In fiscal 2007, the Kyowa Hakko Group continued to decide objectives, targets, and plans and engages in safety activities centered on risk assessment. Progress was checked in annual safety audits. The audit results were subsequently reported to management at meetings of the Environment and Safety Committee and reflected in the action plan for the following year.

In fiscal 2007, it conducted training in comprehensive safety standards for machinery targeting managers and staff with responsibility for environmental and safety matters and facilities managers and staff at principal production and research bases and introduced risk assessment at the facilities design stage. Environmental safety audits conducted by the head office confirmed that the risk assessment results have been reflected in facility design and that risk mitigation activities are being carried out.



Risk assessment training for workers

#### **Accident Statistics**

In fiscal 2007, for the third consecutive year the number of accidents resulting in lost working days at Kyowa Hakko, Kyowa Hakko Chemical, Kyowa Hakko Food Specialties and Kyowa Medex was zero, a frequency rate that ranks among the best in the chemical industry. For the Kyowa Hakko Group, the number of accidents resulting in lost working days was one.

#### ■Occupational Injury Frequency Rate\*1



- ★1 Defined as the number of injuries resulting in lost days per million working hours
- ★2 Kyowa Hakko, Kyowa Hakko Chemical, Kyowa Hakko Food Specialties and

#### **Traffic Safety**

Kyowa Hakko and Kyowa Hakko Food Specialties used 1,153 commercial vehicles (as of March 2008), and the sales offices engaged in traffic safety activities based on a group-wide traffic safety policy. In fiscal 2007, there were 129 at-fault accidents (including accidents at parking areas), a slight increase from the previous year.

With respect to the environment, they have renewed their target of using 100% low-emission company-owned commercial vehicles in 2010. In fiscal 2007, nearly all company-owned vehicles were low-emission vehicles (certified low-emission vehicles), and 92% of all commercial vehicles, including leased private cars, were low-emission vehicles.

Fiscal year	2004	2005	2006	2007
Number of vehicles for sales activities	682	666	699	698
Number of low-emission vehicles	561	606	663	695
Percentage of total fleet (%)	82.3	91	94.8	99.6

#### **Awards**

We received the following award for setting an accidentfree record in Fiscal 2007.

Certificate awarded by the Japan Industrial Safety and Health Association (JISHA) in recognition of a new accident-free record for the organic chemical industry (23.42 million accident-free hours)

Kyowa Hakko Chemical Yokkaichi Plant

#### Safety Manager's Safety Declaration



# Toshiaki Yamagata Senior Manager Environment and Safety (Safety Manager) Sakai Plant, Kyowa Hakko Kirin

Since May 2008, the Sakai Plant has followed the "Safety Manager Safety Declaration," a practice advocated by the Osaka Labour Bureau. The objective is for plant safety managers to set disaster prevention goals and prominently post them in workplaces to promote education and awareness of disaster prevention throughout their plants.

## Aiming for Zero Accident and Disaster Status

To prevent fire and explosion accidents, the Kyowa Hakko Group engaged in activities centered on risk assessment. To prepare against disaster, each worksite put in place a disaster preparedness system to minimize damage and periodically conducted disaster preparedness drills.

# Disaster Preparedness Drill (Tokyo Research Park)

During Hazardous Materials Safety Week in June 2007, Tokyo Research Park, conducted a fire drill jointly with a fire brigade of the Machida Fire Department that involved the use of an organic solvent. In the drill, the sounding of an emergency bell was followed by an official announcement by the laboratory fire brigade, notification of the fire department, initial fire-fighting using indoor fire extinguishers and hoses handled by fire hydrant team members. Following the arrival of the municipal firefighters, the drill simulated rescue by ladder truck of staff members who had inhaled smoke and were trapped on the roof. They then received assistance from ambulance attendants. Following the rescue team drill, the laboratory fire hydrant team participated in a drill involving hosing of a rooftop billboard with water.



A ladder truck rescue drill

A water hosing drill

#### Measures to Prepare for a Major Earthquake

The Kyowa Hakko Group has long been determined to fulfill its social responsibilities as a manufacturer, particularly its responsibilities as a supplier of pharmaceuticals. Since the 1970s, when the possibility of an earthquake in the Tokai region was first suggested, the Group made preparations that included the dispersal of production and distribution operations and the earthquake-proofing of buildings. As part of risk management in preparation for an earthquake deep below Tokai, Tonankai, or the Tokyo metropolitan area, it installed satellite telephones at all business sites, including sales offices, and engaged in monthly drills. Furthermore, in 2007, it introduced a safety confirmation system at the head

office and commenced operation for employees and their families in case of an earthquake emergency. Kyowa Hakko Kirin is now in the process of introducing the system at the laboratories and sales offices.

#### Earthquake Preparedness Drill (Fuji Plant)

Security and Accident Prevention (Kyowa Hakko)

In preparation for an earthquake in the Tokai region, each November the Fuji Plant conducts a disaster preparedness drill. In fiscal 2007, the plant conducted training for building emergency risk assessors\*, who examine the state of buildings following an earthquake, and a drill involving examination of building deformation or cracking, internal wall cracking, ceiling deformation, abnormal noise and other items. In the drill, after building emergency risk assessment the disaster preparedness team headquarters relocated inside a building, and the disaster preparedness team indicated the positions of the disaster site, the plant fire brigade, the headquarters of various teams and the secondary evacuation area on a

map of the grounds and ascertained the status of the disaster. The plant plans to continue to conduct practical drills appropriate to specific emergency situations.



A post-earthquake building examination

\*Assessors are employees who undergo a training course conducted

#### **Distribution Safety**

The Kyowa Hakko Group maintained a 24-hour emergency response system in fiscal 2007 to rapidly deal with emergencies during the transportation of chemicals and alcohol. It followed the Yellow Card and Container Yellow Card systems and thoroughly instructed distribution and transportation workers in disaster response methods. There were no distribution-related accidents during fiscal 2007.



Checking the Yellow Card (Kyowa Hakko Chemical Yokkaichi Plant)

#### **Community Relations (Kyowa Hakko)**

#### Responsible Care (RC) Community Dialog

Every second year, the Sakai Plant, jointly with six Sakai-Senboku area member companies, holds a Responsible Care Community Dialog meeting in the Sakai-Senboku District. The sixth dialog meeting, held at the Mitsui Chemicals Inc. Osaka Plant, drew about 80 participants, including representatives from residents' associations, local schools and public administrations. A plant tour and explanations by member companies of their environmental activities were followed by questions from area residents concerning the response to

odors and other environmental concerns, chemical plant safety and plant tours, as well as individual company presentations about their local environmental and security activities.



The Sakai-Senboku District Responsible Care (RC) Community Dialog meeting (January 29, 2008)

#### **Science Experiment Classes**

The Fuji Plant conducts science experiment classes during spring and summer school breaks in which researchers serve as instructors who guide local upper-grade elementary school and junior high school students as they experience the joy and fun of science experiments. In fiscal 2007, the students observed onion cells and their own cells under microscopes and made artificial "slime." After receiving Fuji

Plant Science Expert Certificates upon completion of the class, the delighted children invited the instructors to return the following year.



A spring break children's science

#### The Bio-adventure Mobile Laboratory

Since 2000, the BioFrontier Laboratories have operated a program to "deliver" science experiment classes using the Bio-adventure Mobile Laboratory, a dedicated vehicle filled



The Bio-adventure Mobile Laboratory

with a variety of experimental equipment. In fiscal 2007, the mobile laboratory visited five schools and facilities to conduct classes that featured hands-on learning activities, such as microscopic observation

of microorganisms, DNA detection and an immune reaction experiment involving coloration. Experimental classes were also conducted for the children of employees.

#### The Kato Memorial Bioscience Foundation

In fulfillment of the desire of Kyowa Hakko founder Dr. Benzaburo Kato to promote the advancement of science and technology, The Kato Memorial Bioscience Foundation provides in wide-ranging research support for young researchers who aim to conduct creative, pioneering research in the field of bioscience. In fiscal 2007, the foundation supported 28 research projects.

#### Nippon Keidanren 1% Club

Kyowa Hakko Kirin continues to participate in the activities of the Nippon Keidanren 1% Club, a group established by the Nippon Keidanren (the Japan Federation of Economic Organizations) for companies that devote at least 1% of their ordinary income to fund social contribution activities. We made donations through the Japan Red Cross Society to support relief activities for victims of the Myanmar cyclone and Sichuan earthquake of May 2008. The Beijing Representative Office and Kyowa Hakko (H.K.) Co., Ltd. also provided assistance at the time of the Sichuan earthquake.

#### **WWF Japan**

The World Wide Fund for Nature (WWF), one of the world's largest conservation non-governmental organizations, engages in environmental conservation activities in about 100 countries around the world. WWF addresses six critical issues: forests, freshwater ecosystems, marine ecosystems, endangered species, climate change and toxic chemical substances. The WWF's activities are all supported by donations from individuals and corporations. Kyowa Hakko Kirin provides support as a corporate member.

#### Distribution of Braille Calendars

Each year since 1994, Kyowa Hakko has produced Braille calendars for people with visual impairments and distributed them free of charge to schools for the blind nationwide. We delivered about 4,000 copies of the 2008 edition of the

calendar, which featured twelve types of living creatures found in and around the home, to 71 schools across Japan.





#### **Expectations for Forest Conservation Activities**

**Azuma:** Last year, employees and their families began forest conservation activities to maintain the area surrounding headwaters above the Kirin Pharma Takasaki Plant. Mr. Hamaoka, you actually participated in the activities. What were your lasting impressions?

Hamaoka: One of the initial aims is to enable employees to bring their families to events and enjoy the forest. Without this kind of opportunity, I would never have known that thinning the forest actually makes the trees grow larger and stronger. The important thing is how to continue the forest conservation activities over time, and I think we must devise various means to ensure continuation. In that regard, the integration with Kyowa Hakko has brought new people into the activity, and I look forward to cooperating with our new colleagues.

Yura: In some instances, forest conservation as a corporate social responsibility activity can be considered less than a top-priority matter, if it is not connected to the actual business of the company in question. However, this forest conservation project is a CSR theme closely linked to Kyowa Hakko Kirin's corporate activities. From the perspective of continuity, it is similar to a business activity, in that you decide goals and make plans to achieve them, isn't it? I hear that the forest conservation activities will take place over three and a half years. I believe that plans

and goals made as specific as possible using numerical targets make activities easy to understand for participants and observers alike.

Tsunoda: I suppose that in this activity you consider only upstream areas. The fact is, maintaining well-managed mountains in upstream areas is an activity that will also contribute to mitigation of flood hazards. Preservation of the water environment can also be reconsidered from the perspective that the river flows into the Karasu River, Tone River and Tokyo Bay. Although, in some cases, ratings from assessment organizations are reduced when social contribution activities are not connected to a company's main business, when we consider which activities truly contribute to society I think that, in fact, this is a highly meaningful activity.





Ichihashi: As an organizer of the forest conservation activities I have mixed emotions, such as concern about possible injury to participants when tools are used, or what to do if the weather is bad. Nevertheless, I want to steadily engage in activities for three and a half years. As environmental systems spiral up through the implementation of a PDCA cycle, I think that continuing with activities is the most important thing. Continuity of activities is one benchmark for evaluation, and I think that whether or not the number of participants and the area covered expand are also good points for evaluation.

**Ueda:** Although the conventional corporate approach is to focus on curbing water usage and avoiding water pollution, I feel that forest conservation activities are more positive. Although I suppose the activities remain at the symbolic stage, I think that the concept of engaging in forest management in the watershed areas of each plant will appeal to society. From a global perspective, waterrelated problems will become the most important consideration in environmental problems. Even with regard to problems with forests in particular, against the backdrop of Japan's post-war forest management failure, I think we have reached a time when society must consider how local communities and companies should participate in forest preservation.

Miyazaki: In that regard, I think that it is extremely important that companies, citizens and the government cooperate in these activities rather than having one party stand out from the others. Recently, there have been active discussions to the effect that everyone should take on public burdens that have heretofore been borne mainly by the national government or public administration. Having inspected the watershed forest, I think that it is extremely significant that Gunma Prefecture, a public corporation and Kirin Holdings are planning to jointly undertake the project.

Tsunoda: As outings for tree thinning are very popular among city residents, a surprising number of shareholders might want to participate. I think that the promotion of shareholder consciousness and development of shareholders who support CSR is another extremely important role of corporations.

Honda: Another consideration is the aspirations of shareholders and investors who engage in activities to move corporations in the direction of awareness of CSR, and how companies proceed in such circumstances is important. Although corporations make social contributions independently through local activities, we may also see the emergence of diverse trends such as links between local companies, links between upstream communities and downstream communities, or collaboration with the fishing industry. As Kyowa Hakko is a materials-oriented company, I think that in some areas we weren't very skillful at communicating corporate targets and goals within and beyond the company. For its part, the Kirin Group, which offers consumer items, is adept at publicizing its activities. I would like to join together in thinking about social contributions within the context of the new company Kyowa Hakko Kirin.



Ms. Kimie Tsunoda Steering Committee of the Valdez Society



Mr. Akifumi Ueda Representative Citizens' Science Initiative Japan



Mr. Satoshi Yura Senior Fellow Center for Public Resources Development



Mr. Fumihiko Miyazaki COF Fellow Research Center on Public Affairs for Sustainable Welfare Society

#### **Environmental Activities at the Takasaki Plant**

Tsunoda: How do you plan to create synergy between the Kyowa Hakko and Kirin Pharma environmental management systems by means of the merger?

Azuma: We are now at the stage where targets and goals have been decided and exchange meetings are the next order of business. At Kyowa Hakko, plants take the lead in management system development. Although the laboratory management system will pose considerable difficulties, it has been decided to move forward with a company-wide integrated system. I think that the most important issue for Kyowa Hakko Kirin is CO2 emissions reduction. The pharmaceuticals industry has shown tremendous growth since 1990, reduction of emissions from the 1990 level is a difficult target. We would like to devise reduction measures such as meeting back-office daytime electricity requirements with renewable energy.

Ichihashi: The Takasaki Plant began operation in 1990. When the plant obtained ISO 14001 certification in 2001, it updated its boilers and converted boiler fuel from heavy oil to gas. The curbing of greenhouse gas emissions has been a watchword since that time. The fact is, the Takasaki area is one of the sunniest areas of Japan, and, while I don't think renewable energy sources will provide sufficient electricity to operate the entire plant, I think it will be possible to increase renewable energy use little by little.

Miyazaki: I think that safety at pharmaceutical plants will become an important consideration for the public. Although beer is a familiar product, when it comes to pharmaceutical products I think it is difficult for the public to understand the safety situation and how products are produced and controlled. How are you mindful of that at this plant?

Ichihashi: When we built the Takasaki Plant, we held a briefing session for area residents. As the Takasaki Plant is not a facility that produces pharmaceuticals by means of chemical synthesis, but rather one that manufactures pharmaceuticals using animal cells to which biotechnology has been applied, we rigorously prevent any release of genetically recombined animal cells from the plant. We have installed high-performance filters to filter the exhaust emitted from the plant. To eliminate organism activity in wastewater, we always include an inactivation process by means of steam blowing or alkaline addition. We dispose of solid waste after performing sterilization. Furthermore, we used data to explain that genetically recombined animal cells cannot survive in the ordinary environment outside the plant.

Hamaoka: Ever since completion of the plant, we have maintained communication with area residents through means including conducting periodic plant tours and participation in local beautification and trash collection activities.



Hajime Ichihashi Vice President Takasaki Plant Kirin Pharma\*



Hideaki Hamaoka Manager **Environmental Control Section** Kirin Pharma\*



Masaki Azuma General Manager Quality Assurance Environment and Safety Department Kvowa Hakko\*

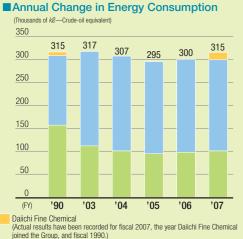


Kenshiro Honda Manager Corporate Communications Department Kyowa Hakko\*

In fiscal 2007, we completed fuel conversion for the principal boilers at the Yamaguchi Production Center Hofu and the Yokkaichi Plant (which account for much of the Group's greenhouse gases emissions). These efforts achieved a combined CO<sub>2</sub> emissions reduction of 83,700 tons per year. Even though Daiichi Fine Chemical was newly included in the Group in fiscal 2007, the Group's overall CO<sub>2</sub> emissions were 692,700 tons, a 14% reduction from the fiscal 1990 level. We expect to achieve the fiscal 2010 target of an 8% reduction from the fiscal 1990 level. Furthermore, we expect a ripple effect throughout the Group resulting from the installation at the Fuji Plant of photovoltaic power generation, a renewable energy source.

# Global-warming Prevention Initiatives

# ■Annual Change in CO<sub>2</sub> Emissions (Thousands of tons)



Kyowa Hakko, Kyowa Hakko Food Specialties, Kyowa Medex and other consolidated subsidiaries



stallation of a Photovoltaic Power eneration System

Kunio Yasuzawa Engineering, Fuji Plant Kyowa Hakko Kirin

Photovoltaic power generation systems, which emit no CO<sub>2</sub> owing to the utilization of natural energy, are a clean energy source attracting attention as a global warming countermeasure. We installed a photovoltaic power generation system on the roof of the pharmaceutical plant, the building that receives the most solar radiation, and began generating electricity in January 2008. We anticipate annual output of 24,000 kilowatt-hours and expect the system to contribute to a reduction in electric power energy use at the Fuji Plant. We will continue to raise awareness of energy conservation among employees in ways going beyond the use of solar power and actively promote the Kyowa Hakko Kirin Group's eco-activities.



#### Boiler Fuel Conversion

#### Akihiro Yamao

Engineering Section, Yamaguchi Production Center Kyowa Hakko Bio

On March 28, 2007, the Yamaguchi Production Center Hofu implemented boiler fuel conversion, a goal of many years. Previously, we had private power generation involving steam generated using an old C-grade heavy oil-fired boiler that was in use since construction of the plant more than 35 years ago. As the boiler had no desulfurization equipment, the plant accounted for more than 95% of the SOx emissions of the entire Group. Now we have dramatically reduced emissions, thanks to the purchase of steam from Hofu Energy Service (HES) and conversion to a gas-fired boiler. The blue bridge in the photograph is a pipe bridge for steam piped from HES.

#### Conversion of G1 Boiler Fuel to L

#### Masaki Ito

Administration Department, Yokkaichi Plant Kyowa Hakko Chemical

Amid consideration of group-wide initiatives to reduce CO2 emissions as a global warming prevention measure, in April 2007, the Yokkaichi Plant achieved, with the cooperation of many involved departments, a plan to convert the principal fuel used for its G1 boiler from C-grade heavy oil to LNG. The use of LNG has reduced CO<sub>2</sub> emissions by approximately 25% in comparison with heavy oil (an annual reduction of 50,000 tons). The conversion to clean energy has had other beneficial effects, including the discontinuation of ancillary facilities such as exhaust gas desulfurization equipment.







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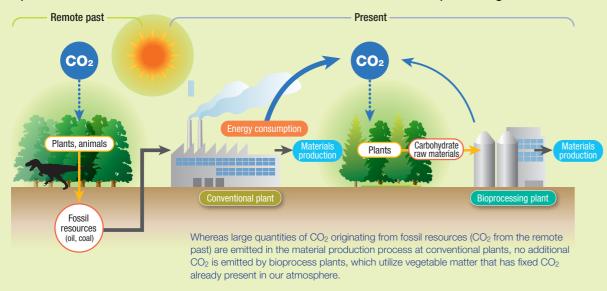
# Environment-friendly Products and Technologies

A Future Global Environment Supported by New Fermentation Biotechnologies

## **Green Sustainable Chemistry**

The food products, medicines, and chemicals that support our healthy, affluent way of life are built on the knowledge-intensive production technologies of industries such as agriculture, forestry, fisheries, pharmaceuticals and chemicals. At a time when the world faces growing shortages of foodstuffs, global warming, environmental pollution, depletion of oil resources and other problems, expectations for green sustainable chemistry have increased. Accordingly, we will step up technical development in this field, which is based on production technologies that utilize biological functions.

#### Comparison of Materials Production Processes at Conventional Plants and Bioprocessing Plants



The expression "green sustainable chemistry" refers to biochemical technologies that use as raw materials crop biomass and agricultural waste, which can be repeatedly reproduced from the sunlight and atmospheric CO<sub>2</sub>. In the 20th century, we consumed large quantities of oil and coal (fossil resources) as energy and chemical product raw materials to support an affluent and comfortable way of life. Today, however, we are threatened by soaring prices resulting from resource depletion and global climate fluctuation caused by the fossilized CO<sub>2</sub> that has been reintroduced into the atmosphere.

In recent years, the U.S. and Brazil have enjoyed competitive advantages from their capabilities to mass produce inexpensive, high-quality carbohydrate sources by means of large-scale agriculture, and they have realized industrial production of biochemical products such as fuel ethanol and bio-plastic raw materials. In Japan, excellent green sustainable chemistry technologies have been nurtured, as exemplified by the fifty-year history of amino acid fermentation. This technological excellence has been

underpinned by a high level of basic technology, such as the search for useful microorganism processes, genetic modification of microorganisms and the development of reaction systems using enzymes or microorganisms.

Kyowa Hakko has undertaken to create new bioproducts, and it has succeeded in creating host cells with dramatically improved productivity by optimally controlling biosynthetic pathways and metabolic pathways. It has also discovered enzymes that manifest reactivity and stability comparable to those of chemical catalysts. Also, by engaging in research into material production processes that waste no energy or carbon resources, we have succeeded in bio-production of the cerebral function improvement agent cytidyl choline (Cognizin®), which had previously been manufactured by chemical synthesis, and in bringing the world the new amino acids ornithine and citrulline. To respond to important health and environmental issues in the 21st century, in the coming years, we will further develop green sustainable chemistry that applies leading-edge biotechnologies.

#### **Kyowa Hakko Chemical**

Refrigerator Lubricant Raw Materials for Non-ozone Layer Depleting CFC Substitutes (HFCs)

# ISONONANOIC ACID (KYOWANOIC-N) and 2-ETHYL HEXANOIC ACID

Specified chlorofluorocarbons (HCFCs, R-22) have been used as refrigerants in air conditioners for home and commercial use and in commercial refrigerators and freezers. However, international activities to prevent ozone layer depletion have been undertaken since the second half of the 1980s, and complete abolition of specified chlorofluorocarbons (HCFCs) in 2010 is planned in Japan and the U.S. In step with rapid expansion of the market for air conditioners,

large freezers and other equipment that uses non-ozone layer depleting CFC substitutes (HFC R-407C, R-410A, etc.), the demand for CFC substitutes and highly soluble lubricating oil (refrigerant oil) for compressors has grown. With the aim of contributing to preservation of the global environment, to meet this demand, during fiscal 2008, Kyowa Hakko Chemical will increase production capacity for synthetic fatty acid refrigerant oil raw materials (ISONONANOIC ACID and 2-ETHYL HEXANOIC ACID) to 60,000 tons per year, among the highest in the world.

#### Kyowa Hakko Bio

Feed Additive Amino Acids and Enzymes That Promote Environment-friendly Stockbreeding

## L-Lysine, L-Valine, L-Arginine Phytase, Driselase

Kyowa Hakko Bio supports environment-friendly stockbreeding through the supply of feed additive amino acids (such as L-Lysine, L-Valine, L-Arginine) and enzymes (such as Phytase and Driselase).

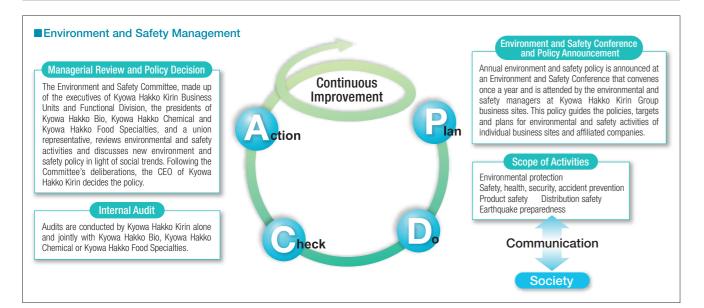
#### **Environment and Safety Management**

#### **Environment and Safety Management**

On October 1, 2008, the Kyowa Hakko Kirin Group established the Basic Policy on the Environment, Safety, and Product Safety and Action Guidelines. We engage in environmental and safety activities grounded in an ISO 14001 environmental management system and Occupational Safety and Health Management Systems (OSHMS). All business sites observe laws and regulations related to safety and the environment and engage in activities based

on even more rigorous voluntary targets. We also engage in voluntary Responsible Care activities undertaken with full employee participation. To promote environmental consideration across the entire supply chain, we have begun activities with the objective of changing from the current ISO 14001 certification at each business site to ISO 14001 certification extended also to the head office, production sites and research laboratories in 2009.

**Basic Policy** on the Environment, Safety and Product Safety Based on Kyowa Hakko Kirin's corporate philosophy, we will exert ourselves to realize an affluent society by conducting business activities with scientific consideration for health, safety, the environment and product safety throughout the entire life cycle of each of our products. That extends from research and development through production, marketing, use and disposal. At the same time, we are making efforts to ensure the quality and safety of our products, taking the safety of consumers as a matter of the greatest importance.



#### Environmental and Safety Audits Conducted in Fiscal 2007

An overview of the environmental and safety audits conducted in fiscal 2007 is provided in the table below.

#### **■**Environmental and Safety Audits

All sites of Kyowa Hakko, Kyowa Hakko Chemical and Kyowa Hakko Food Specialties (9 plants, 2 research laboratories, 7 sales bases, headquarters) 14 consolidated and non-consolidated subsidiaries of 9 companies, including overseas (production, engineering, transportation) Progress with policies, compliance with environment and safety laws: environmental safety-related risk management; progress with the performance improvement of the Kyowa Eco-project Environment and safety director, qualified ISO auditors, environment Auditors and safety officers of the business units, Kyowa Hakko Chemical

> Kyowa Hakko, consolidated and non-consolidated subsidiaries in Japan: once a year, Kyowa Hakko sales bases: twice a year, overseas subsidiaries: once in three years

and Kyowa Hakko Food Specialties, local union representatives

The results of audits performed at 33 business sites of 12 companies, Kyowa Hakko, its consolidated subsidiaries and non-consolidated subsidiaries in Japan and overseas revealed no major legal infringements or environmental accidents.

#### Complaints

In fiscal 2007, 13 complaints were received about Kyowa Hakko Group plants in Japan and overseas: six complaints about noise or vibration, three complaints about odors, two complaints about dust, one complaint about the color of wastewater and one complaint about another matter. We regret the inconvenience caused to residents in nearby areas of the plants and have taken prompt action to prevent the recurrence of these problems. We will pay heed to prevent these complaints and aim to reduce the number of complaints to zero.

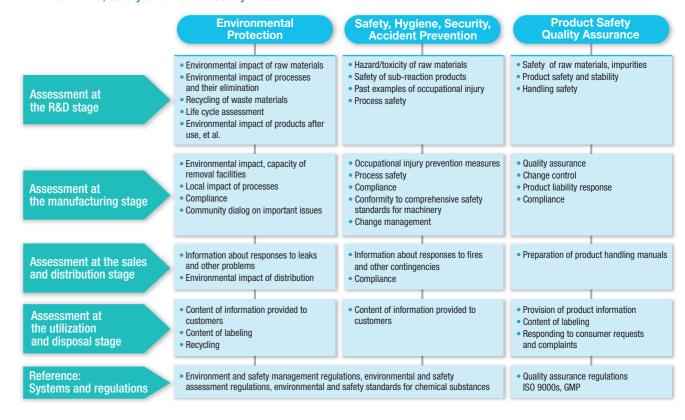
#### **Environmental, Safety and Product Safety Assessments**

#### Environmental, Safety and Product Safety Assessments

Kyowa Hakko Kirin has established the Basic Policy on the Environment, Safety, and Product Safety, engages in wideranging Responsible Care activities related to the environment and safety and rigorously operates a system of assessments at each product lifecycle stage, from research and development to use and disposal.



#### ■Environmental, Safety and Product Safety Assessments



#### Safety Assessment of Chemical Products

Kyowa Hakko Kirin continuously conducts chemical product safety assessments in cooperation with the Japan Chemical Industry Association and the Japan Plasticizer Industry Association. In fiscal 2007, Group companies actively engaged in the Program for Gathering and Disseminating Safety Information on Existing Chemical Substances (Japan Challenge Program); Kyowa Hakko Chemical, its subsidiary J-PLUS, Kyowa Hakko Kogyo and its subsidiary Daiichi Fine Chemical have registered as sponsors (including consortium sponsorship) for a total of four substances and are currently gathering safety information.

Furthermore, we held internal liaison meetings concerning the Registration, Evaluation, Authorisation and restriction of Chemicals (REACH) system, shared information, and made preparations for pre-registration. We also continued voluntary activities concerning conversion to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) hazard labels and MSDS.

#### Ethical Considerations in Research and Development

Kyowa Hakko Kirin undertakes research and development of drugs in consideration of the following matters.

Kyowa Hakko Kirin sets internal regulations with the aim of assuring ethical and scientific validity in human genome analysis and research using human tissue and of preventing the loss of dignity and human rights of tissue donors.

#### Consideration of Human Rights in Clinical Trials

When commencing a clinical trial involving human subjects, Kyowa Hakko Kirin convenes an internal clinical trial committee consisting of external physicians and employees not involved in pharmaceutical development. The committee discusses ethicality, including the protection of the human rights and personal information of the trial subjects (patients) and volunteers, as well as safety and clinical trial quality.

#### Consideration of Laboratory Animals

To ensure the appropriate conduct of animal testing, Kyowa Hakko Kirin sets a basic policy as well as specific policies governing experiments for each research site, based on laws and guidelines set forth by the government and academic groups.

#### Action Plans and Performance in Fiscal 2007 (Environment and Safety)

\*From fiscal 2008 to fiscal 2010

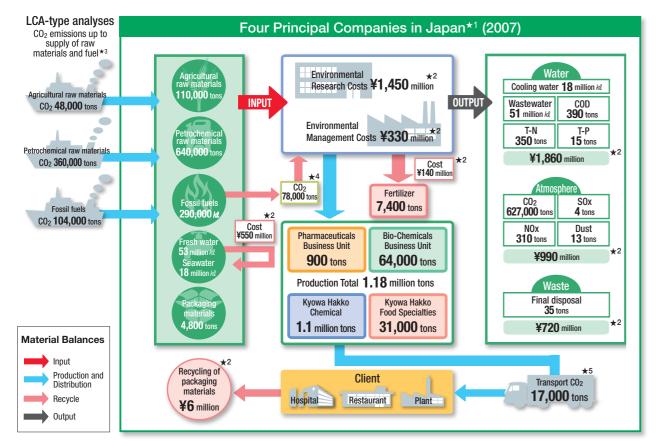
			 				*From fiscal 200	
Guideline for Action	Initiative	Fiscal 2007 Target (Kyowa Hakko)	Fiscal 2007 Performance (Status of Progress)			Evaluation*2	5 (7	Page
Guideline for Action ①	Establishment of ISO 14001 environmental management system	Establishment of ISO 14001 system at Kyowa Hakko, Kyowa Hakko Chemical, Kyowa Hakko Food Specialties, Kyowa Medex and consolidated subsidiaries	Continued renewal of ISO 14001 certification at 9 business sites of Kyowa Hakko, Kyowa Hakko Chemical, Kyowa Hakko Food Specialties, Kyowa Medex and 1 subsidiary, Voluntary declaration system set up and launched at 2 companies			©	ISO 14001 integration (Kyowa Hakko Kirin)  Development of a waste recycling governance system	P27
Expand the application of environmental and safety management systems	Integration of ISO 14001 and Occupational Safety and Health Management System (OSHMS)	Kyowa Hakko, Kyowa Hakko Chemical, Kyowa Hakko Food Specialties, Kyowa Medex: Operation of integrated management system	Environment and safety management systems in operation Risk assessments introduced at affiliated companies			0	Environmental safety risk reduction (accidents, violations)	P27
	Audits of consolidated and non-consolidated subsidiaries	Annually engage in audits of 85% of Group companies	Audits of sites of consolidated and non-consolidated subsidiaries and sites in other countries (100%)		0		Audits of consolidated subsidiaries (100%)	P27
	Ensuring compliance	Zero legal infringements, zero complaints	Zero punitive legal infringements concerning environmental safety Increase to 13 environmental complaints (noise and vibration: 6, odors: 3, dust: 2, the color of wastewater: 1, another matter: 1)	Kyowa E	co-Index*1	© ×	Zero punitive legal infringements concerning environmental safety Reduction in the number of environmental complaints	P27
	[Production and R&D]			2006	2007			
	Kyowa Eco-Project							
	Global warming prevention (CO <sub>2</sub> emissions)	Reduction of CO <sub>2</sub> emissions to 6% below fiscal 1990 level or lower by fiscal 2010	692,700 tons*4, 14% reduction from fiscal 1990 level Start of introduction of renewable energy sources	0.85	0.76	<b>⊚</b> *³	Achieve fiscal 2010 CO <sub>2</sub> emissions at or below 8% from fiscal 1990 levels* <sup>4</sup> Periodic updating of freezers that use the chlorofluorocarbon R11	P23, 24 P37
	Unit energy consumption	Reduction of unit energy consumption by 1% or more per annum	1.5% increase from the previous year's level at 8 principal plants			×	Average reduction in unit energy consumption of 1% or higher (9 plants)	3)
		Reduction of fiscal 2010 unit energy consumption to 80% of the 1990 level (Japan Chemical Industry Association target)	Reduction of unit energy consumption at Kyowa Hakko, Kyowa Hakko Food Specialties, Kyowa Medex and other consolidated subsidiaries to 87%, and at Kyowa Hakko Chemical to 92% of the 1990 level			0	Reduction of fiscal 2010 unit energy consumption to 80% of the 1990 level (Japan Chemical Industry Association target)	P23
	Volume of waste disposal at landfill sites	Maintaining zero emissions, a target of 250 tons or lower	Continued zero emission status. 40 tons, 59% reduction from the previous year's level	0.006	0.002	0	Final disposal at landfills of less than 105 tons in fiscal 2010	P35
	Reduction in chemical substance emissions	50% reduction in chemical substance emissions from fiscal 2003 levels in fiscal 2007	12 chemical substances: 9.4 tons, 5% reduction from 2003 levels PRTR Class 1 chemical substances: 35.8 tons, 7% reduction from 2003 levels VOCs: 382 tons, 38% reduction from 2003 levels			0	Reduction of fiscal 2010 chemical substance emissions by 50% from fiscal 2003	P37
	Atmosphere							
Guideline for Action 2	• S0x emissions	Below 250 tons*6	 4.3 tons, 99.5% decrease from the previous year's level	2.0	0.01	0	Below 100 tons★6 in fiscal 2010	P36
Ensure compliance and continuously improve performance	NOx emissions	Below 731 tons*5	 30.8 tons, 39% decrease from the previous year's level	0.9	0.5	0	Below 610 tons*6 in fiscal 2010	P36
improve performance	Dust emissions	Below 287 tons*5	 13.1 tons, 34% decrease from the previous year's level	0.48	0.31	0	Below 110 tons <sup>★6</sup> in fiscal 2010	P36
	Water							
	Fresh water usage volume	_	 52.2 million tons, 4% decrease from the previous year's level	3.2	3.0		Ongoing rationalization of water use	P33
	COD levels	Below 920 tons★7	 387 tons, 22% decrease from the previous year's levels	1.5	1.1	0	Below 920 tons <sup>★7</sup> in fiscal 2010	P36
	Nitrogen levels	Below 850 tons★7	 345 tons, 16% decrease from the previous year's levels	1.4	1.2	0	Below 850 tons★7 in fiscal 2010	P36
	Phosphorous levels	Below 25 tons*7	 14.6 tons, 28% decrease from the previous year's levels	1.0	0.7	0	Below 25 tons*7 in fiscal 2010	P36
	Disasters, accidents	Record no labor/work or environment- or safety-related accidents	Recorded zero labor/work accidents with absence and one accident at consolidated subsidiaries *4, and no environment or safety-related accidents			0	Reduction of accidents involving loss of working days by half  —Below 2.5 accidents	P17, 27
	Distribution environment and safety	Rationalization of distribution, assurance of environmental and safety in distribution	Submission of periodic report and plan for consigners specified by the Act Concerning the Rational Use of Energy, and year-on-year improvement in unit energy consumption (Kyowa Hakko, Kyowa Hakko Chemical) Low-emission cars accounted for 99.6% of cars in business use			© ©	Rationalization of distribution, ensure environmental safety in distribution 100% of corporate sales vehicles to be low-emission vehicles by fiscal 2010	P18 P17
	[Administration]							
	Green Office Plan (GOP)	Reduction of at least 1% per annum in power consumption	0.3% reduction from the previous year's level			0	1% or higher reduction in electricity use per year	P38
		Reduction in copy paper use of 10% below fiscal 2003 levels over 3 years	0.1% reduction from the previous year's level, 11.9% reduction from 2003 level			<b>©</b>	5% reduction in copy paper use from fiscal 2006 levels over 3 years	P38
		Green purchasing of 70% in fiscal 2007 (value basis)	Green purchasing of 80% of copy paper and office supplies			0	Green purchasing of 80%	P38
Guideline for Action 3	LCA/Material balance	Transparency and analysis in material balance at each business	LCA-type analyses of material balance and environmental loads, continued assessments of each company's resource efficiency and unit emissions			0	Ongoing business assessments through LCA/material balance assessments	P31, 32
Consider the environment throughout the entire product life cycle	Green procurement	Implementation of environmental consideration inquiries at business partner companies	Revision of green procurement guidelines			0	Procurement of raw materials, office supplies, facilities, and other items with low environmental impact (green procurement)	P14
Guideline for Action   Upgrade environmental and safety assessments	Thorough environmental, safety and product safety assessments	Thorough environmental and safety assessment, risk management	Confirmation of environmental and safety assessment implementation through environmental and safety audits at each business site Checking of product safety data acquisition status at productization meetings			0	Thorough environmental and safety assessment Acquisition of product safety data	P28
Guideline for Action   Develop new products and technologies	Environment-conscious technology and product development	Realization of development of technologies and products	Environment and Safety Committee discussion of the results of environment- friendly technology and product development Continuation of green sustainable chemistry research			0	Environment-friendly technology and product development Continuation of green sustainable chemistry research	P25
Guideline for Action <b>3</b> Provide safe and useful products	Assurance of consumer safety and product user-friendliness	Comprehensive product information and disclosure	Japan Challenge Program sponsorship registration for four substances by the Group Holding of internal liaison meetings about the REACH system			0	Gathering of safety information on sponsored substances REACH pre-registration	P28

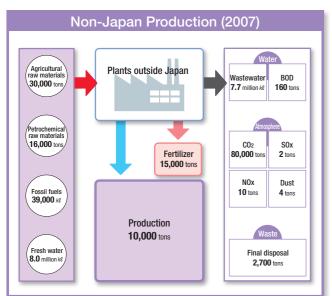
- ★1 The Kyowa Eco-Index compares unit emissions with Japanese averages on a production value basis.
- CO<sub>2</sub>, air-pollution, waste index = [Total emissions by the Group / Total emissions in Japan] / [Total production value by the Group / Japan's net domestic product]
  SOx, NOx, dust emission volume: Emissions in fiscal 2002, based on survey of fixed sources affecting the
- atmospheric environment (Environmental Statistics Book 2008, Environmental Policy Bureau, Ministry of
- the Environment, Japan) Waste emission volume, landfill volume: Industrial waste volume, treatment status in fiscal 2005 (January 20, 2008, report from the Ministry of the Environment website)
- Net domestic product: Statistical data (Economic and Social Research Institute, Cabinet Office, Government
- Water pollution index = [Total emissions by the Group / Total emissions into closed bodies of water] / [Total production value of the Group / Net domestic product of prefectures surrounding closed bodies of water] COD, nitrogen, phosphorous: Volume occurring in fiscal 2004 in regions targeted by water regulations (Environmental Statistics Book 2008, Environmental Policy Bureau, Ministry of the Environment, Japan)
  Net domestic product of prefectures surrounding closed bodies of water: Fiscal 2005 Prefectural Economic
  Accounts (Economic and Social Research Institute, Cabinet Office, Government of Japan)
- Fresh water usage volume index = [the Group's total usage volume / Japan's total usage volume] / [the Group's total production value / Japan's net domestic product] Fresh water usage volume: Fiscal 2004 domestic non-commercial water (14.2 billion tons) + industrial water fresh water replacement volume (11.1 billion tons)
- (Data: Water Resources Department, Ministry of Land, Infrastructure and Transport)
- ★2 Evaluation ⊚: Achieved target ○: Change in the scope of aggregation X: Target not reached
  ★3 Kyowa Hakko Chemical reviewed its fiscal 1990 CO₂ emissions in accordance with revisions to the Law
  Concerning the Promotion of the Measures to Cope with Global Warming.
- ★4 This figure is for the production and research sites of Kyowa Hakko, Kyowa Hakko Bio, Kyowa Hakko Chemical, and Kyowa Hakko Food Specialties. CO<sub>2</sub> emissions targets and performance and complaints and accident performance for Dalichi Fine Chemical, which joined the Group in June 2007, have been added.

  \*5 The target is 50% of the emission level conforming to the legally mandated concentration.
- ★6 This is a target that takes into account boiler fuel conversion.
- ★7 The target is 50% below the site's self-imposed target level.

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## Material Balance by the Kyowa Hakko Group Business Operations

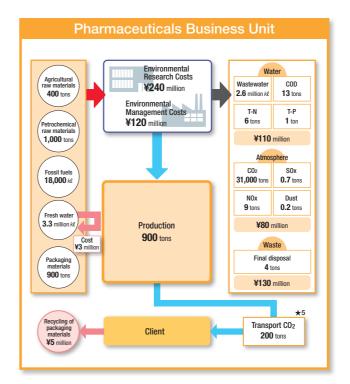


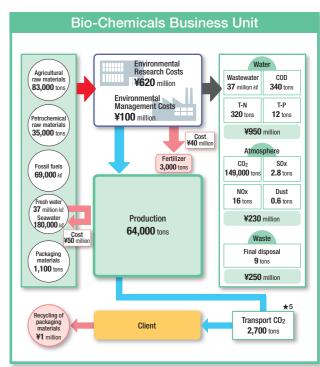


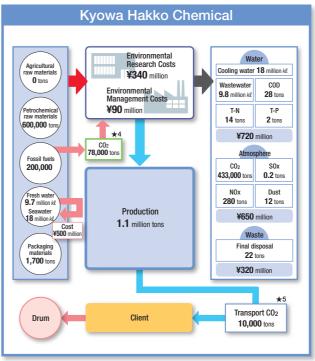
- $\bigstar 1$  Excluding Takasaki Plant (joined April 1, 2008).
- ★2 The figures shown here were extracted from the environmental accounts.
- ★3 JLCA-LCA Database 2004 (2nd Edition), An Introduction to LCA Administration—Environmental Load of 4,000 Social Stocks, Japan Environmental Management Association for Industry (JEMAI) (1998)
- $\bigstar 4\,$  The amount of  $CO_2$  fixed in products by means of the oxo process
- ★5 As the consignor, CO₂ emission figures corresponding to the provisions of the Act Concerning the Rational Use of Energy have been used

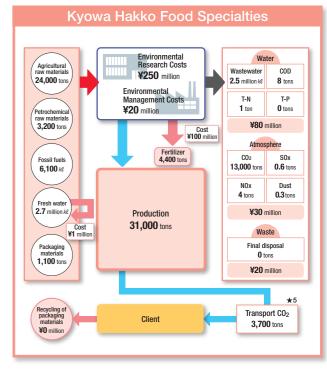
#### ■ Resource Efficiency

Tresource Entreterity  Year-on-year Evaluation →: Unchanged \(\frac{1}{2}\): Improvement											
		Pharmaceuticals Business Unit		Bio-Chemicals Business Unit		Kyowa Hakko Food Specialties		Kyowa Hakko Chemical		Four Principal Companies	
Resource Efficiency*6	tons/¥100 million sales	1.42	7	315	$\rightarrow$	295	$\rightarrow$	628	$\rightarrow$	301	7
nesource Efficiency	tons/tons of production	1.69	7	1.83	7	0.88	$\rightarrow$	0.55	7	0.63	7
Fuel Efficiency*7	kℓ/¥100 million sales	17.4	7	186	7	65	$\rightarrow$	208	7	118	$\rightarrow$
Tuel Liliciency	kℓ/tons of production	20.7	$\rightarrow$	1.1	7	0.20	$\rightarrow$	0.18	$\rightarrow$	0.25	$\rightarrow$
Packaging Materials	tons/¥100 million sales	0.81	$\rightarrow$	3.0	$\rightarrow$	12.0	7	1.8	7	2.0	$\rightarrow$
Efficiency	tons/tons of production	0.97	7	0.018	7	0.036	$\rightarrow$	0.0016	7	0.0041	$\rightarrow$
Fresh Water Resource	1,000 kl/¥100 million sales	3.17	7	99	7	29	7	10	7	21	$\rightarrow$
Efficiency	1,000 kl/tons of production	3.8	$\rightarrow$	0.58	7	0.087	7	0.009	$\rightarrow$	0.045	$\rightarrow$









#### ■ Unit Emissions

		Pharmaceuticals Business Unit		Bio-Chemicals Business Unit		Kyowa Hakk Specialt		Kyowa Hakko (	Chemical	Four Principal Companies		
Unit CO <sub>2</sub> Emissions	tons/¥100 million sales	29.7	7	401	7	136	7	456	7	254	7	
Unit Final Disposal	tons/¥100 million sales	0.004	7	0.02	7	0	$\rightarrow$	0.02	7	0.014	7	
Unit Water Pollution Emissions*8	tons/¥100 million sales	0.018	7	1.8	7	0.10	7	0.05	$\rightarrow$	0.30	7	
Unit Air Pollution Emissions*9	tons/¥100 million sales	0.010	7	0.1	7	0.05	7	0.31	7	0.13	7	

- $\bigstar 6$  Index of total usage of agricultural and petrochemical raw materials
- ★7 Index of crude oil conversion to express energy usage in kl
- ★8 Index of total COD, N and P levels
- ★9 Index of total SOx, NOx and dust emissions

#### **Environmental Accounting**

Principal facility investments in fiscal 2007 were for the installation of a photovoltaic power generation system at the Fuji Plant, the augmentation of nitrogen reduction facilities at the Yamaguchi Production Center Hofu and wastewater treatment facilities at the Kyowa Hakko Chemical Yokkaichi Plant.

		Environmental Protection Costs (¥	Effec	ci				
	CI	assification/Principal Activities (FY2007)	FY2	006	FY2	007	Focus	
	Gi	assincation/Frincipal Activities (F12007)	Investment	Expense	Investment	Expense	i ucus	
(1)	In-Situ Op	perating Costs	1,037	4,135	611	4,285		
	①Water p	lution Control Costs ollution control ] Augmentation of nitrogen reduction facilities, activated sludge treatment facilities, etc. Improvement and operation/maintenance of wastewater treatment facilities	485	1,699	458	1,880	Total volume of wastewater  COD levels  Nitrogen levels  Phosphorous levels	
Brea	[Investment	ution control, etc.  1 Updating of flare stack facilities, etc.  The cost of operating and maintaining flue gas desulfurization and denitration facilities, exhaust gas facilities, deodorization facilities and pollution load levies	238	556	24	440	• SOx emissions • NOx emissions • Dust emissions	
Breakdown		bal Environmental Protection Costs  Installation of a photovoltaic power generation system, updating of freezers  Purchase and use of CO <sub>2</sub> as a raw material for the oxo process, operation and maintenance of energy conservation facilities	264	580	87	563	Unit energy consumption (crude oil conversion)  At Kyowa Hakko, Kyowa Medex, plus 5 other companies  At Kyowa Hakko Chemical  CO <sub>2</sub> emissions  CO <sub>2</sub> usage volume (Kyowa Hakko Chemical)	1
		source Recycling Costs ] Maintenance and upkeep of dewatering equipment, etc. Maintenance and management of water conservation facilities and waste recycling and treatment facilities, outside recycling and contracted disposal of waste	50	1,300	42	1,402	Fresh water usage volume     Waste materials     Waste disposal at landfill sites	
(2) Upstream and Downstream Costs [Expense] Promotion of green purchasing of office supplies, refurbishment contract charges under the Packaging Materials Recycling Law		0	42	6	39	Scope of Summary:		
(3) Environmental Activities Costs  [Expense] Operation of environmental management systems, observation of environmental impact, preparation of environmental disclosure documents, environmental improvement, including nature conservation, greening, beautification and scenery preservation at offices and in surrounding areas		100	436	17	464	Kyowa Hakko (Fuji Plant, Saka Plant, Yamaguchi Production ( Center Ube, BioFrontier Labora Development Center, Healthra Kyowa Hakko Chemical (Chiba Medex (Fuji Plant), Kyowa Hak Plant), Ohland Foods (Chiba Pl Foods, as well as the laborator	at ar k	
(4) R&D Costs [Expense] R&D of environment-friendly products R&D aimed at controlling environmental impact at the production stage		4	1,322	6	1,456	Period Covered: Fiscal 2006 (April 1, 2006–Mar Fiscal 2007 (April 1, 2007–Mar  Calculations were based on s	С	
(5)		ty Activities Costs Membership in and cooperation with environmen- tal protection and nature conservation activities	0	14	0	13	ing standards contained in th Guidelines 2005 of Ministry o	f
(6)		ental Damage Related Costs Oil pollution liability insurance	0	1	0	1	of materials, cost of repairs, of Green purchasing statistics re	Οl
To	tal		1,141	5,950	640	6,258	ronmentally conscious produ	С

Item/Activities (FY2007)	FY2006	FY2007
item/Activities (F12007)		
Total Investment Upgrading and expansion of functional product manufacturing facilities, etc.	13,237	12,633
Total R&D Costs R&D of new products and technologies	33,036	32,413
Sales of Items Related to Resource Recycling as in (1)-3 Fertilizer containing organic materials, used catalysts and by-product oil, etc.	63	109
Effect Related to Saving Resources as in (1)-2 and 3 Conservation of energy, water and resources and waste reduction	1,317	2,780

Kyowa Hakko (Fuji Plant, Sakai Plant, Pharmaceuticals Yokkaichi Plant, Yamaguchi Production Center Hofu, Yamaguchi Production Center Ube, BioFrontier Laboratories, Healthcare Products Development Center, Healthcare Tsuchiura Plant, Head Office), Kyowa Hakko Chemical (Chiba Plant, Yokkaichi Plant), Kyowa Medex (Fuii Plant), Kvowa Hakko Food Specialties (Tsuchiura Plant), Ohland Foods (Chiba Plant, Tsuchiura Plant), Kyowa F.D. Foods, as well as the laboratories inside the above plants.

46.4 million tons

387 tons

**345** tons

14.6 tons

4.3 tons

308 tons

13.1 tons

 $183\ell$  ton of production 0.5% improvement

64.3 kℓ/¥100 million

650,000 tons

78,000 tons

52.2 million tons

125,000 tons

40 tons

6% decrease

22% decrease

16% reduction

28% decrease

99.5% decrease

39% decrease

34% decrease

9% increase

11% reduction

14% decrease

4% reduction

20% increase

59% decrease

#### Period Covered:

Fiscal 2006 (April 1, 2006-March 31, 2007) Fiscal 2007 (April 1, 2007-March 31, 2008)

- · Calculations were based on suggested environmental accounting standards contained in the Environmental Accounting Guidelines 2005 of Ministry of the Environment.
- Expenses include depreciation, personnel costs, utility fees, cost of materials, cost of repairs, outside contracting costs.
- · Green purchasing statistics represent total purchases of environmentally conscious products, including Eco Mark products.



#### Joint Assessment

Biokyowa, established in 1984, is the Kyowa Hakko Group's oldest overseas plant. On September 3, 2008, Biokyowa conducted a checklist-based joint environment and safety assessment. The company has set forth environmental policies and safety policies and engages in wide-ranging activities to ensure compliance with U.S. laws and standards concerning the environment and safety. The company conducts independent programs and engages in voluntary activities under the guidance of the organizations responsible for safety and the environment. It was a meaningful joint assessment that deepened mutual understanding of the present state of safety and the environment and focused attention on future issues.

#### **Safety Activities**

Biokyowa engages in sophisticated safety activities in accordance with U.S. laws concerning occupational safety. The company conducts safety patrols, engages in safety education, and holds safety meetings and, for the past four years,



Machinery lockouts (attention to safety)



A bulletin showing the number of accident-free days

has conducted independent safety programs. With respect to facilities, the company appropriately attaches safety guards and danger warnings and other safety markings to machinery and equipment and has installed machinery lockouts at more than 1,000 locations. Since 2006, the company has demonstrated high safety performance, maintaining a record of zero accidents resulting in lost working days.

#### **Environmental Activities**

To cope with production volume increases, Biokyowa has completely updated the air-diffusion pipes of its waste liquid treatment facilities and is striving to enhance facility capabilities and safe operation. Also, the waste sludge generated from biological treatment of amino acid fermentation wastewater is rich in nitrogen and phosphor and serves as an excellent fertilizer for feed crop producers in the vicinity of the plant.



A wastewater treatment tank



Application of fertilizer

**33** KYOWA HAKKO KIRIN GROUP SUSTAINABILITY REPORT 2008 KYOWA HAKKO KIRIN GROUP SUSTAINABILITY REPORT 2008 **34** 

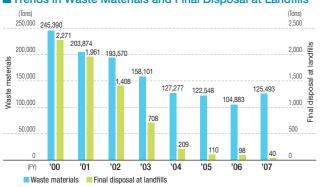
reventing Water and Air Pollution



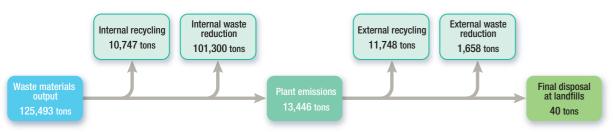
#### **Zero Emission Activities**

The Group's final waste disposal at landfills in fiscal 2007 was 40 tons, a reduction of 58% from the previous year and an improvement on the target of 125 tons or less. This success indicates that Kyowa Eco-Project zero emission activities have taken root at business sites. The volume of solid waste generated at the Yamaguchi Production Center Hofu increased owing to recovery of more solid waste from molasses fermentation wastewater through efforts to increase wastewater clarity. On the other hand, the recycling rate of potash components and organic components contained in molasses fermentation waste has increased. Future plans call for cross-implementation of the waste treatment methods obtained from zero emission activities at the business sites at Daiichi Fine Chemical, which was newly added to the Group. Also, the business sites are attempting to convert industrial waste into valuable resources. For instance, increased separation of waste flexible container bags, pallets, waste solvents and waste paper, coupled with the acquisition of users of these wastes, has led to an increase the volume of waste sold for value.

#### ■Trends in Waste Materials and Final Disposal at Landfills



#### ■ Overall flow of waste recycling and disposal (FY2007)



# Measures Concerning Polychlorinated Biphenyls (PCBs)

The Group places used transformers, condensers and stabilizers in secure storage facilities designed to prevent seepage into the ground. The reported increase in low-concentration PCB oil accompanied the opening of terminal boxes containing insulating oil. Each business site has arranged for PCB treatment with Japan Environmental Safety Corporation.

Condensers and transformers	104
Lighting stabilizers	3,638
Insulation oil containing PCBs	869ℓ
(As of	March 31, 2008)

#### Waste Recycling Governance

The development of waste recycling governance is a matter of increasing importance to companies. In addition to audits conducted at the time of conclusion of waste disposal outsourcing contracts, periodic outsourcing partner audits are an environmental safety requirement. Kyowa Hakko Kirin is studying the development of a governance system with a target implementation date of fiscal 2009. The system would be effective and entail little business site burden thanks to features such as audit checklists, uniformity in periodic audit frequency, and the sharing of audit resources.

#### Overall Flow of Waste Recycling and Disposal

Although the Group's volume of waste generated increased from the previous year, we achieved a reduction in plant waste emissions due to internal waste reduction. The landfill disposal rate is a low 0.03%.

#### Water Pollution Prevention Measures

**COD Emissions** 

Nitrogen Emissions

Fermentation plant production facilities continued to operate at high capacity in fiscal 2007. Nevertheless, at the Yamaguchi Production Center Hofu (which is located on the coast of the Seto Inland Sea and subject to water quality and total pollutant emissions regulations) the departments in charge of manufacturing, research, engineering, quality assurance and environmental safety jointly organized a wastewater load reduction project at the direction of the plant director. In March 2007, the project team began to identify causes of higher levels of wastewater and implement concrete countermeasures, including optimization of operating conditions in the waste fluid treatment process to improve the COD and nitrogen extraction ratios, facilities conversion and process modification to minimize the amount of ammonia emitted in amino acid manufacturing, and an increase in the volume of molasses fermentation wastewater effectively utilized. Thanks to the efforts of this plant, the Group was able to reduce overall COD emissions by 22%, nitrogen emissions by 16% and phosphorous emissions by 28%. The Yamaguchi Production Center Hofu also continued with the



Mitajiri Bay Clean-up Campaign, a Seto Inland Sea clean-up activity.

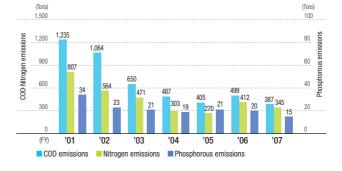
less than 920 tons (fiscal 2010)

less than 850 tons (fiscal 2010)

Phosphorous Emissions less than 25 tons (fiscal 2010)

The Mitajiri Bay Clean-up Campaign (Yamaguchi Production Center Hofu)

#### ■COD, Nitrogen and Phosphorous Emissions



#### Phosphoric Acid Recovery and Recycling

SOx Emissions less than 100 tons (fiscal 2010)

NOx Emissions less than 610 tons (fiscal 2010)

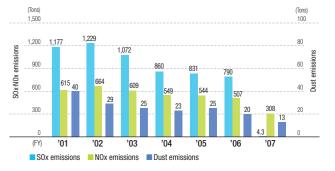
Dust Emissions less than 110 tons (fiscal 2010)

Facilities to recover phosphoric acid from fermentation wastewater installed at the Yamaguchi Production Center Hofu the previous year operated throughout fiscal 2007, recovering 510 tons of dehydrated cake (59 tons of  $P_2O_5$ ). The average phosphorous analysis value of the recovered dehydrated cake was 12.7%, a concentration comparable to that of phosphate rock. Future plans call for the establishment of a drying process for dehydrated cake and expansion of its use as raw material for phosphoric acid production.

#### **Air Pollution Prevention Measures**

The Group's SOx emissions improved dramatically from 790 tons the previous year to 4.3 tons in fiscal 2007. The reason for the improvement was the decommissioning of boilers at the Yamaguchi Production Center Hofu that lacked desulfurization equipment. Also, we achieved a 40% reduction in emissions of NOx originating from the nitrogen components contained in heavy oil by means of fuel conversion from heavy oil to gas. In the results for air pollutant emissions in fiscal 2007, SOx emissions were decreased by 99.6%, NOx emissions by 50%, and dust emissions by 67%. A Kyowa Eco-Project activity to reduce air pollutant emissions through the installation of gas boilers, which began with boiler fuel conversion at the Sakai Plant in fiscal 2001, was nearly completed in fiscal 2007, when the above results were obtained. A remaining long-term issue for consideration is conversion of electric power at the plants to renewable energy sources (such as photovoltaic power generation).

#### ■SOx, NOx and Dust Emissions





#### Restriction on Emissions of 12 Chemical Substances

Fiscal 2007 emissions into the environment of 12 chemical substances targeted by the chemical industry for priority efforts for emission reduction totaled 9.4 tons. Although the emissions figure increased from the previous year, this is the result of recalculation of chloroform emissions using a low-concentration gas-liquid equilibrium in the interest of greater accuracy.

#### Curbing Emissions of PRTR\* Law Class I **Chemical Substances**

The total amount of PRTR Law Class I chemical substances handled by the Group increased from 225 thousand tons in the previous year to 264 thousand tons in fiscal 2007, and emissions into the environment increased slightly to 35.8 tons. The increases were mainly attributable to the abovementioned review of the method of calculating chloroform emissions. The Group also ascertains annually emissions into the environment of 481 substances determined by the Japan Chemical Industry Association.

#### ■Total Emissions of Class I Chemical Substances



★PRTR: Pollutant Release and Transfer Register, relating to release amounts of specific

#### Managing Soil Pollution Risk

On the basis of soil pollution countermeasure regulations established in 2004, the Group conducts surveys when buying or selling land and when discontinuing the use of regulated substances. In fiscal 2007, we implemented voluntary soil contamination countermeasures in one location attendant on the buying or selling of land.

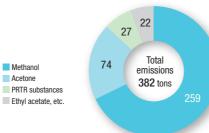
#### Preventing Ozone Layer Depletion

The Group is implementing periodic updating of large freezers at 15 business sites. Emissions of specified chlorofluorocarbons (CFCs) in fiscal 2007 decreased by 1.71 tons, or 14%, year on year.

## Reducing Volatile Organic Compound (VOC)

The Group reports to prefectures the status of facilities subject to regulation under the Air Pollution Control Law and will undertake necessary reduction measures by fiscal 2010. We will also continue to improve processes and facilities not subject to regulation, with an emphasis on methanol, a substance for which emissions are high. The Group's VOC emissions in fiscal 2007 decreased slightly to 382 tons.

**■**Emissions of Volatile Organic Compounds (Fiscal 2007)





#### **Kyowa Eco-Project (KEP)**

#### **KEP Targets**

- To reduce the Group's CO<sub>2</sub> emissions by 8% from the fiscal 1990 level by fiscal 2010
- To reduce energy consumption per unit by 1% per annum
- To achieve final disposal at landfills for the Group of 105 tons or less in fiscal 2010

The Kyowa Eco-Project is the core of the Group's global warming prevention and zero emissions activities at production and research sites. The Group held the annual Eco-Project meeting in June 2008.



#### **Green Office Plan (GOP)**

#### **GOP Targets**

- To reduce electricity consumption by at least 1% per annum
- To reduce copy paper use by 5% from the fiscal 2006 level over the next three years
- To achieve a green purchasing ratio of 80% in fiscal 2008

The Group's head office, sales offices, plants and research facilities, in cooperation with the labor union and General Affairs Department, engage in the Green Office Plan (GOP), a program of environmental protection activities for administrative sections.

#### **Car-free Commuting Movement**

#### Keiko Enomoto

Environment and Safety Section Yamaquchi Production Center Ube Kvowa Hakko Bio

To reduce CO<sub>2</sub> emissions in any way possible, in May 2006 we launched the Car-Free Commuting Movement to encourage

employees to refrain from commuting to work by car and promote carpooling, walking and the use of bicycles and public transportation. Through these initiatives, in fiscal 2007 we were able to achieve a reduction of 7,611 kilograms of CO<sub>2</sub> (equivalent to the amount of CO<sub>2</sub> absorbed by 543 cedar trees). The environmental awareness of our employees has increased each year.

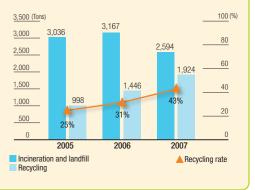
#### **Environmental Activities at Daiichi Fine Chemical**

Daiichi Fine Chemical. which joined the Group in June 2007, has its headquarters plant in Takaoka City, Toyama Prefecture. The plant, which excels at organic synthesis and chiral technologies involving the use of enzymes, manufactures bulk phar-



maceuticals and bulk vitamins. With regard to environmental activities, the plant obtained ISO 14001 certification in 1999 and maintains a framework for implementing a PDCA management cycle, including an Energy Conservation Committee and an Environment Committee.

#### ■Incineration and Landfill and **Recycling Volumes and Ratios**



#### **Site Data**

Names of business bases below are as of October 1, 2008.

#### 1 Fuji Plant/Fuji Research Park, Kyowa Hakko Kirin



1188 Shimotogari, Nagaiizumi-cho, Sunto-gun, Shizuoka 411-8731 +81-55-986-7600 65,000 m<sup>2</sup>

> Pharmaceuticals May 29, 2000

Initiative		Fiscal 2006	Fiscal 2007	
IIIIuauve		Performance	Performance	Comparison
Unit energy consumption	(kℓ*/m²-floor area)	0.209	0.213	102%
S0x emissions	(tons/year)	0.12	0.24	200%
NOx emissions	(tons/year)	3.0	2.9	98%
Dust emissions	(tons/year)	0	0	_
Wastewater volume	(million tons/year)	2.5	2.5	98%
COD levels	(tons/year)	2.6	4.3	165%
Nitrogen levels	(tons/year)	3.3	4.9	151%
Phosphorous levels	(tons/year)	0.25	0.49	196%
Volume of waste materials	G (tons/year)	630	625	99%
Volume of waste disposal at landfill sites	(tons/year)	0	0	_

\*crude-oil equivalent

#### 2 Sakai Plant, Kyowa Hakko Kirin



1-1-53 Takasu-cho, Sakai-ku, Sakai-shi, Osaka 590-8554 +81-72-223-5554 21,000 m<sup>2</sup>

s Pharmaceuticals November 27, 2000

Initiative		Fiscal 2006	Fiscal	2007
IIIIuauve		Performance	Performance	Comparison
Unit energy consumption	(kℓ*/m²-floor area)	0.157	0.138	87%
S0x emissions	(tons/year)	0	0	_
NOx emissions	(tons/year)	0.47	0.40	85%
Dust emissions	(tons/year)	0	0	_
Wastewater volume	(million tons/year)	0.073	0.064	87%
COD levels	(tons/year)	3.1	3.1	98%
Nitrogen levels	(tons/year)	0.5	0.4	75%
Phosphorous levels	(tons/year)	0.10	0.12	118%
Volume of waste materials	(tons/year)	382	332	87%
Volume of waste disposal at landfill sites	(tons/year)	5	4	78%

\*crude-oil equivalent

#### 3 Takasaki Plant, Kyowa Hakko Kirin



100-1 Hagiwara-cho, Takasaki-shi, Gunma 370-0013 +81-27-353-2011

125,000 m<sup>2</sup> lain activities Pharmaceuticals

November 26, 2001

Initiative		F15641 2001
Initiative		Performance
Unit energy consumption (kl/*/¥100 mi	llion of production)	10.5
SOx emissions	(tons/year)	0
NOx emissions	(tons/year)	1.35
Dust emissions	(tons/year)	0.07
Wastewater volume	(million tons/year)	0.18
COD levels	(tons/year)	0.36
Nitrogen levels	(tons/year)	0.38
Phosphorous levels	(tons/year)	0.05
Volume of waste materials	(tons/year)	170
Volume of waste disposal at landfill sites	(tons/year)	2.2
	*(	crude-oil equivaler

#### 4 Tokyo Research Park, Kyowa Hakko Kirin



3-6-6 Asahi-machi, Machida-shi, Tokyo 194-8533 +81-42-725-2555 31,071 m<sup>2</sup> Pharmaceuticals (basic research)

Initiative		Fiscal 2006	Fiscal :	2007
ппиаиче		Performance	Performance	Comparison
Unit energy consumption	(kℓ*/m²-floor area)	0.083	0.084	101%
SOx emissions	(tons/year)	0	0	_
NOx emissions	(tons/year)	0.05	0.05	100%
Dust emissions	(tons/year)	0	0	_
Wastewater volume	(million tons/year)	0.012	0.009	75%
COD levels	(tons/year)	0.23	0.12	52%
Nitrogen levels	(tons/year)	0.15	0.00	0%
Phosphorous levels	(tons/year)	0.02	0.00	0%
Volume of waste materials	(tons/year)	71	68	96%
Volume of waste disposal at landfill sites	(tons/year)	3	0.2	7%

\*crude-oil equivalent

#### 5 Yamaguchi Production Center Hofu, Kyowa Hakko Bio



1-1 Kyowa-machi, Hofu-shi,

Yamaguchi 747-8522 +81-835-22-2511 694,000 m<sup>2</sup> Biochemicals, alcohol pharmaceuticals, foodstuffs

July 26, 1999

Bandata at true		Fiscal 2006	Fiscal 2	2007
Initiative		Performance	Performance	Comparison
Unit energy consumption (kl*/¥100 m	illion of production)	180	187	104%
SOx emissions	(tons/year)	784	2.2	0.3%
NOx emissions	(tons/year)	196	14.5	7%
Dust emissions	(tons/year)	9.7	0.6	6%
Wastewater volume	(million tons/year)	18	19	102%
COD levels	(tons/year)	302	234	77%
Nitrogen levels	(tons/year)	322	273	85%
Phosphorous levels	(tons/year)	10	3.5	34%
Volume of waste materials	(tons/year)	62,255	77,842	125%
Volume of waste disposal at landfill sites	(tons/year)	11	6	55%

\*crude-oil equivalent

#### 6 Yamaguchi Production Center Ube, Kyowa Hakko Bio Including Ube Plant of Kyowa Hakko Kirin

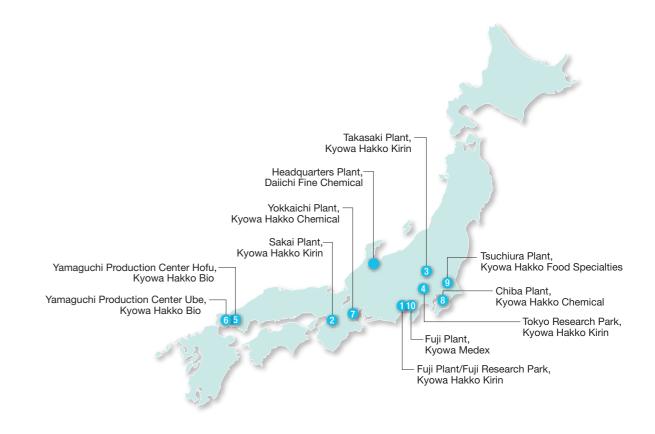


2548 Fujimagari, Ube-shi, Yamaguchi 755-8501 +81-836-22-5500 479,000 m<sup>2</sup> es Biochemicals, pharmaceuticals

September 11, 2000

Initiativa		Fiscal 2006	Fiscal:	2007
iiillauve	Initiative		Performance	Comparison
Unit energy consumption (kl*/¥100 m	illion of production)	58	49	83%
S0x emissions	(tons/year)	4.1	0.8	19%
NOx emissions	(tons/year)	2.2	2.1	95%
Dust emissions	(tons/year)	0.04	0.02	43%
Wastewater volume	(million tons/year)	23	20	86%
COD levels	(tons/year)	143	113	79%
Nitrogen levels	(tons/year)	71	52	73%
Phosphorous levels	(tons/year)	7.8	8.4	108%
Volume of waste materials	(tons/year)	6,196	5,901	95%
Volume of waste disposal at landfill sites	(tons/year)	3.0	3.4	113%

\*crude-oil equivalen



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#### **Financial Data**

#### 7 Yokkaichi Plant, Kyowa Hakko Chemical Including Yokkaichi Plant of Kyowa Hakko Kirin



2-3 Daikyo-cho, Yokkaichi-shi, Mie 510-8502 +81-59-331-0624 320,000 m<sup>2</sup>

Chemicals, pharmaceuticals July 23, 2000

Initiative		Fiscal 2006	Fiscal :	2007
IIIIuauve		Performance	Performance	Comparison
Unit energy consumption ( £	/ton of production)	187	185	99%
SOx emissions	(tons/year)	0.4	0.0	0%
NOx emissions	(tons/year)	265	237	90%
Dust emissions	(tons/year)	7.5	8.7	116%
Wastewater volume	(million tons/year)	2.80	2.72	97%
COD levels	(tons/year)	9.5	9.9	104%
Nitrogen levels	(tons/year)	2.4	2.6	108%
Phosphorous levels	(tons/year)	1.2	1.2	98%
Volume of waste materials	(tons/year)	32,720	38,499	118%
Volume of waste disposal at landfill sites	(tons/year)	21	19	89%

\*crude-oil equivalent

#### **8** Chiba Plant, Kyowa Hakko Chemical



11-1 Goiminamikaigan, Ichihara-shi, Chiba 290-8560 +81-436-23-9111 215,000 m<sup>2</sup>

s Chemicals

November 27, 2000

Initiative		Fiscal 2006	Fiscal	2007
IIIIuauve		Performance	Performance	Comparison
Unit energy consumption ( $\ell^*$	ton of production)	176	179	102%
SOx emissions	(tons/year)	0.3	0.2	67%
NOx emissions	(tons/year)	30	41	137%
Dust emissions	(tons/year)	2.1	3.3	157%
Wastewater volume	(million tons/year)	1.83	1.86	102%
COD levels	(tons/year)	18	18	101%
Nitrogen levels	(tons/year)	11.4	11.7	103%
Phosphorous levels	(tons/year)	0.6	0.8	133%
Volume of waste materials	(tons/year)	685	826	121%
Volume of waste disposal at landfill sites	(tons/year)	43	3	7%

\*crude-oil equivalent

#### Tsuchiura Plant, Kyowa Hakko Food Specialties Including Healthcare Tsuchiura Plant of Kyowa Hakko Bi



4041 Ami, Ami-machi, Inashiki-gun, Ibaraki 300-0398 +81-29-888-8001 188,000 m<sup>2</sup>

ties Fondstuffs

March 21, 2000

Initiative		Fiscal 2006	Fiscal 2007	
iniuative		Performance	Performance	Comparison
Unit energy consumption (ke*/¥100 m	illion of production)	34.4	37.4	109%
S0x emissions	(tons/year)	0.5	0.5	97%
NOx emissions	(tons/year)	3.2	3.8	121%
Dust emissions	(tons/year)	0.24	0.27	114%
Wastewater volume	(million tons/year)	0.6	0.6	104%
COD levels	(tons/year)	7.7	4.5	59%
Nitrogen levels	(tons/year)	0.7	0.6	95%
Phosphorous levels	(tons/year)	0.05	0.12	230%
Volume of waste materials	(tons/year)	1,055	741	70%
Volume of waste disposal at landfill sites	(tons/year)	0	0	_

\*crude-oil equivalent

#### **10** Fuji Plant, Kyowa Medex



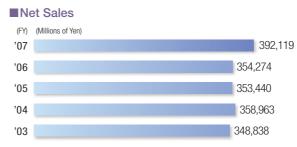
600-1 Minamiisshiki, Nagaizumi-cho, Sunto-gun, Shizuoka 411-0932 +81-55-988-6000 24,000 m<sup>2</sup> Site area

Main activities Diagnostic reagents, medical equipment, contract analysis

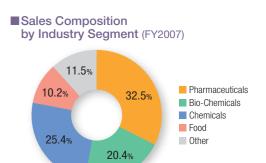
November 26, 2001

Initiative		Fiscal 2006	Fiscal 2007	
IIIIuauve		Performance	Performance	Comparison
Unit energy consumption (kl*/¥100 m	illion of production)	14.0	15.5	111%
SOx emissions	(tons/year)	0.59	0.44	75%
NOx emissions	(tons/year)	6.2	5.6	90%
Dust emissions	(tons/year)	0.12	0.18	150%
Wastewater volume	(million tons/year)	0.08	0.09	115%
COD levels	(tons/year)	0.04	0.04	100%
Nitrogen levels	(tons/year)	0.02	0.01	50%
Phosphorous levels	(tons/year)	0.01	0.01	100%
Volume of waste materials	(tons/year)	68	67	98%
Volume of waste disposal at landfill sites	(tons/year)	0	0	_

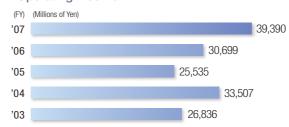
#### Consolidated Financial Data (Kyowa Hakko)



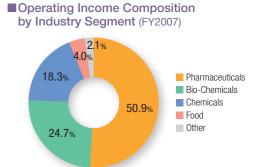
Reference information: Kirin Holdings Company, Limited's consolidated net sales for the Pharmaceuticals business segment (Kirin Pharma Company, Limited and its consolidated subsidiaries) in the fiscal year ended December 2007 were ¥69,909 million.



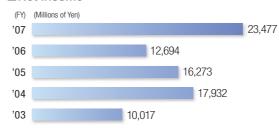
#### **■**Operating Income

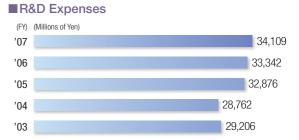


Reference information: Kirin Holdings Company, Limited's consolidated operating income for the Pharmaceuticals business segment (Kirin Pharma Company, Limited and its consolidated subsidiaries) in the fiscal year ended December 2007 was ¥13,001 million.



#### ■Net Income





#### ■Number of Employees



Reference information: The number of employees was 7,917 as of June 30, 2008. (On April 1, 2008 Kirin Pharma Company, Limited became a consolidated subsidiary of Kyowa Hakko).



#### Apology for the recall of CONIEL® tablets

From September 2007 to February 2008, Kyowa Hakko recalled part of its shipment of CONIEL® tablets, an agent for the treatment of hypertension and angina pectoris available on the Japanese market. We deeply apologize for causing any inconvenience and concern to patients, medical institutions and others involved. No health problems have been reported in relation to this matter. We are making a sincere effort to prevent the recurrence of such an incident.

#### Third-party Assessment (Viewpoint)



Itaru Yasui, Ph.D. Professor Emeritus. The University of Tokyo Vice Rector Emeritus, United Nations University

For the past five years I have prepared a third-party social responsibility assessment. This year, the corporate structure has changed, and I supposed that some sort of drastic change might have occurred. In fact, however, I was relieved to find continuity with the CSR efforts implemented heretofore.

Among the many matters explained, the highlight this year for me was boiler fuel conversion at the Yamaguchi Production Center. In this initiative, Kyowa Hakko constructed a pipe bridge to receive a supply of 20-atmosphere steam from a neighboring industrial complex in order to discontinue use of its aged C-grade heavy oil boilers. It seems that the new heat source is a power generation boiler, and the supplied steam is generated using waste heat that was previously discarded. As companies that principally use bioprocesses can utilize even somewhat low-temperature heat sources of about 200°C more effectively than ordinary chemical companies, Kyowa Hakko was able to effectively utilize previously unproductive waste heat. The effective harnessing of waste heat by the Yokkaichi Plant, which had succeeded in reducing CO<sub>2</sub> emissions by fully 25% by converting C-grade heavy oil to LNG, is a highly effective measure that reflects a spirit of avoiding wastefulness at all costs.

One matter of concern is that these activities leave nearly no room for further fuel conversion. It seems that while leading-edge means to achieve future reductions in CO<sub>2</sub> emissions are available, only measures with poor investment efficiency remain: for instance, photovoltaic power generation equipment, such as that used at the Fuji Plant, or the introduction of fuel cells.

That is to say, Kyowa Hakko Kirin has reached an upper limit in its environmental response. A similar ceiling has likely been reached with regard to emissions of harmful chemical substances. Although an upper limit appeared to have been reached with regard to reduction in COD, nitrogen and phosphor emissions, I regard the start of operation of phosphoric acid recovery equipment at the Yamaguchi Production Center in 2007 to be highly significant.

Despite the extreme scarcity of the earth's phosphor resources, the phosphor used in fertilizers ultimately flows into the seas and oceans. There is no other way to return phosphor from the sea to the land than to capture fish and plankton and use them as fertilizer. Flushing phosphor into the sea is not correct from the perspective of resource conservation either, and the installation of recovery equipment is desirable.

The stakeholder meeting section of the report indicates that forest conservation activities aimed at conserving water resources has begun. This is similar to the introduction of photovoltaic generation, in that it is a final environmental response that can be taken when the upper limit of CO<sub>2</sub> emissions reduction has been reached; the most prominent impression I obtained this year is that, at last, Kyowa Hakko Kirin has reached its destination in environmental activities. The most important thing is for the company to continue with its policies and carry on with its activities.

An expert in materials chemistry. Dr. Itaru Yasui has been implementing major environmental research projects for the past 15 years and is an important opinion leader in this area. He is concerned that there have been no comprehensive environmental research projects to meet today's need for research data based on intelligent insights. In line with his view that appropriate policy decisions must be based on a comprehensive viewpoint, he is currently implementing his own Internet-based campaign asking people to consider the extent to which an individual can achieve comprehensiveness.

http://www.yasuienv.net (Japanese only)

**Third-party Verification** 

Sustainability Report 2008 Third-Party Verification—Written Opinion (Translation from Japanese)

October 1, 2008



レスポンシブル・ケア Dr. Yuzuru Matsuda President and Chief Executive Officer Kyowa Hakko Kirin Co., Ltd.

Akio Yamamoto

#### Objectives of Verification

This Responsible Care Report Verification refers to Sustainability Report 2008, which was prepared by Kyowa Hakko Kirin Co., Ltd. (hereafter the "report"). It expresses the opinion of the Responsible Care Verification Center as a chemical industry specialist on the following matters

- 1) The reasonableness of methods used to calculate and aggregate performance indicators (numerical data) and the accuracy of numerical data
- 2) The accuracy of non-numerical information in the report
- 3) Details of responsible care activities
- 4) Characteristics of the report
- Verification Procedures
- · At the corporate level: The reasonableness of the method used to aggregate performance indicators reported from each site (office, plant) and the accuracy of non-numerical information in the report were examined. The examination entailed interviewing those responsible for operations and preparation of the report and by obtaining documents and explanations thereof from them.
- · At the site level: The reasonableness of the methods used to calculate the numerical data reported to the head office, the accuracy of the numerical data, and the accuracy of non-numerical information in the report were examined. The site examination entailed interviewing those responsible for operations and preparation of the report, obtaining documents and explanations of those documents, and crosschecking against evidential documents and materials.
- · Numerical data and information in the report were verified by sampling.

#### Opinion

- 1) The reasonableness of methods used to calculate and aggregate performance indicators (numerical data) and the accuracy of numerical data
- · Numerical data were calculated and aggregated reasonably by the head office and the BioFrontier Laboratories (Machida City, hereafter the "Laboratories").
- · Performance indicators were calculated and aggregated accurately across the scope of the survey.
- There is room for improvement in the numerical data transcription method used to aggregate numerical data at the Laboratories
- 2) Accuracy of the information in the report
- · The accuracy of the information in the report was confirmed. Although the existence of issues with the appropriateness of expressions or ease of understanding was pointed out at the draft stage, these have been corrected in the present report and there are now no important matters that require correction,
- 3) Details of responsible care activities
- · We were impressed that Kyowa Hakko has made steady improvements in CO2 emissions, atmospheric emissions of chemical substances, and industrial waste final disposal volume and waste recycling volume. Continuous improvement at companies and plants newly added to the Group is desirable
- · We were impressed that Kyowa Hakko Kirin has adopted a triple-check system for product safety assurance at business sites, business unit headquarters and the head office.
- · We were impressed that the forest conservation activities by the Takasaki Plant impact downstream areas.
- · In resource recycling, phosphor recycling at the Yamaguchi Production Center Hofu and cobalt recycling at the Kyowa Hakko Chemical Co., Ltd. Chiba Plant have achieved results.
- · The Laboratories and the Fuji Plant have for many years conducted science experiment classes to deepen relations with their host communities.
- 4) Characteristics of the report
- · As the first report as the Kyowa Hakko Kirin Group, the majority of the numerical data is based on Kyowa Hakko Group data for fiscal 2007. The Takasaki Plant has been added to the plants covered in the report.
- · As the descriptions on each page assume certain readers, technical expressions are used in places.





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