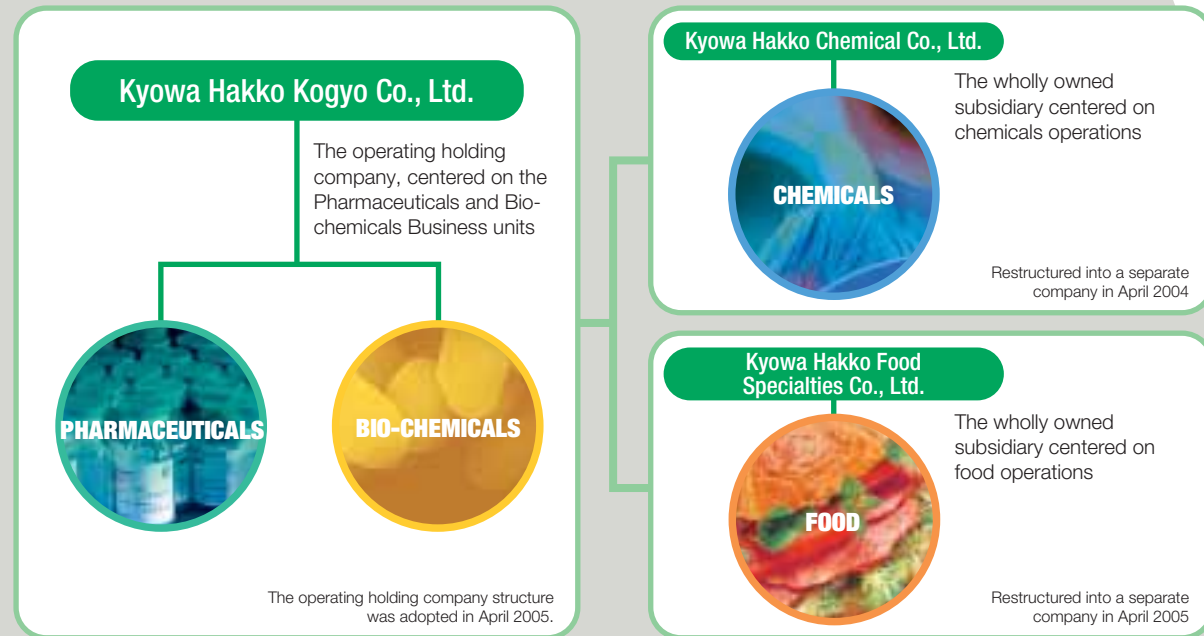


**KYOWA HAKKO GROUP**  
**SUSTAINABILITY REPORT**  
**2005**



# The Kyowa Hakko Group's Business Activities



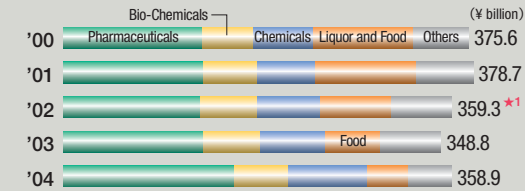
## Corporate Data

Corporate Name Kyowa Hakko Kogyo Co., Ltd.  
 Established July 1, 1949  
 Paid-in Capital ¥26,745 million (at March 31, 2005)  
 Representatives President, CEO: Dr. Yuzuru Matsuda  
 Head Office 1-6-1 Ohtemachi, Chiyoda-ku, Tokyo 100-8185, Japan  
 TEL: +81 (3) 3282-0007

Description

- Manufacture and sale of pharmaceuticals and clinical diagnostic reagents
- Manufacture and sale of amino acids, pharmaceutical materials, health foods, agrochemicals and alcohol for use in liquor production
- Manufacture and sale of solvents, plasticizers, plasticizer raw materials and specialty chemicals
- Manufacture and sale of seasonings and ingredients for confections and bread

## Consolidated Net Sales



## Consolidated Number of Employees



\*1 Liquor operations were transferred to Asahi Breweries, Ltd. in September 2002.

## BASES IN JAPAN

### Kyowa Hakko Production Bases\*2

- Fuji
- Tsuchiura (Healthcare)
- Sakai
- Yokkaichi (Pharmaceuticals)
- Hofu
- Ube

### Principal Consolidated Production Bases\*2

- Kyowa Hakko Chemical Co., Ltd. Chiba Plant
- Kyowa Hakko Chemical Co., Ltd. Yokkaichi Plant
- Kyowa Hakko Food Specialties Co., Ltd. Tsuchiura Plant
- Kyowa Medex Co., Ltd. Fuji Plant

### Other Consolidated Production Bases

- Ohland Foods Co., Ltd. Chiba and Tsuchiura Plants
- Riken Kagaku Co., Ltd.
- Kyowa F. D. Foods Co., Ltd.
- Kyowa Hifoods Co., Ltd.

### Sales Bases

- Sapporo
- Tohoku
- Tokyo
- Nagoya
- Osaka
- Chugoku
- Shikoku
- Kyushu

### Research Laboratories of Four Principal Companies\*2

- BioFrontier Laboratories
- Pharmaceutical Research Center
- Medicinal Chemistry Research Laboratories
- Pharmacokinetic Research Laboratories
- Drug Formulation Research Laboratories
- Toxicological Research Laboratories
- Sakai Research Laboratories
- Healthcare Research Laboratories
- Technical Research Laboratories
- Kyowa Hakko Chemical Co., Ltd. Yokkaichi Research Laboratories
- Kyowa Hakko Food Specialties Co., Ltd. Food Creation Center
- Kyowa Medex Co., Ltd. Fuji Research Laboratories

## BASES OUTSIDE JAPAN

### Production Bases

- BioKyowa, Inc. (U.S.A.)
- Select Supplements, Inc. (U.S.A.)
- Shanghai Kyowa Amino Acid Co., Ltd. (China)
- Wuxi Kyowa Food Co., Ltd. (China)

### Principal Sales Bases

- Kyowa Hakko U.S.A., Inc.
- Kyowa Hakko Europe GmbH
- Kyowa Hakko U.K. Ltd.
- Kyowa Italiana Farmaceutici S.R.L.
- Kyowa Hakko (H.K.) Co., Ltd.
- Kyowa Hakko Industry (Singapore) Pte Ltd.
- Kyowa Hakko (Thailand) Ltd.
- Kyowa Hakko (Malaysia) Sdn Bhd.
- Kyowa Pharmaceutical (H.K.) Co., Ltd.

### R&D Bases

- Kyowa Pharmaceutical, Inc. (U.S.A.)
- Kyowa Hakko U.K. Ltd.
- BioWa, Inc. (U.S.A.)

\*2 Pertaining to the four principal companies—Kyowa Hakko, Kyowa Hakko Chemical, Kyowa Hakko Food Specialties and Kyowa Medex

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# 1 Foreword

- Kyowa Hakko adopted an operating holding company structure in April 2005.

➔ P1 P5,6 P8



# 9 Special Features

- Environmental and social history—a timeline of environmental and social activities by the Kyowa Hakko Group ➔ P9, 10
- A pledge to our customers and society ➔ P19
- Contributing to society through our business activities—the social perspective of the Kyowa Hakko Group business activities ➔ P20 ~ P27

# 11 Management

- Environment and safety management systems under the operating holding company structure ➔ P12

# 18 Social Performance

- The Yokkaichi Plant of Kyowa Hakko Chemical extends the industry record for accident-free hours worked ➔ P31
- Kyowa Hakko also gives priority to mental health ➔ P31
- Kyowa Hakko Group interaction with consumers and society manifested in all aspects of its business, social and environmental activities ➔ P33

## Editorial Policy

The information contained in the Kyowa Hakko Group's "Sustainability Report 2005" refers primarily to the performance of Kyowa Hakko Kogyo Co., Ltd., Kyowa Hakko Chemical Co., Ltd., Kyowa Medex Co., Ltd., Kyowa Hakko Food Specialties Co., Ltd., which was separated in April 2005, and the domestic consolidated production subsidiaries listed in Page 1. In March 2005, before the start of actual compilation work for this report, we held a stakeholder meeting with representatives of nonprofit organizations. The aim of this initiative was to develop concepts for the report and obtain input that could be used to enhance its content. Third party verification was used to improve the reliability of information contained in this report. We also sought expert opinions about the overall concept of the report. We value these contributions and will continue to use them in future reports. In compiling this report, we referred to the Environmental Reporting Guideline of the Ministry of the Environment and the Responsible Care Code. The report is also

based on the approach contained in the Sustainability Reporting Guidelines 2002 of the Global Reporting Initiative (GRI). From the viewpoint of corporate social responsibility (CSR), we have also included material concerning business ethics, interaction with society and communities, voluntary initiatives by employees, and the social significance of our business operations.

The Kyowa Hakko Group is involved in different activities, ranging from pharmaceuticals to foods. This report accordingly refers to policies designed to reduce environmental loads and curb emissions. These are examined from an LCA perspective, based on material balance and environmental accounting data for each business segment. To maintain continuity with past reports and because of differences in the ways which emissions are attributed, information pertaining to the four companies responsible for production activities in other countries has been compiled separately from the data for our Japanese operations.

# 34 Environmental Performance

- CO<sub>2</sub> emissions were at 90.4% of the level of the base year (1990). ➔ P42
- Wastewater loads (COD, nitrogen, phosphorous) were substantially reduced through technology improvements and facility investment. ➔ P43
- Zero emission status was achieved three years ahead of the target year. ➔ P45



# 50 Communication

- The Kyowa Hakko Group held a stakeholder meeting to seek third-party opinions. These inputs were used to form the concept for this report and enhance its content. ➔ P51

## Link to Website

This report can also be viewed on the Kyowa Hakko website. The report on the environmental and safety page of the website includes supplemental information, such as plant overviews, environmental and safety policies, environmental and safety initiatives and a presentation of results.

<http://www.kyowa.co.jp>

## Areas and Periods Covered by Report

The information contained in this report covers production, R&D and sales sites in Japan, and production, development and sales sites in other countries (Page 1).

Environmental loads and other data were gathered from production and R&D sites in Japan and production sites in other countries. Green Office Plan data have been integrated for sales sites in Japan and sales

and development sites in other countries.

Japanese statistics in this report cover fiscal 2004 (April 2004-March 2005), while statistics from outside Japan refer to calendar 2004 (January-December 2004). Some information pertaining to 2005, such as the results of initiatives, is also included.

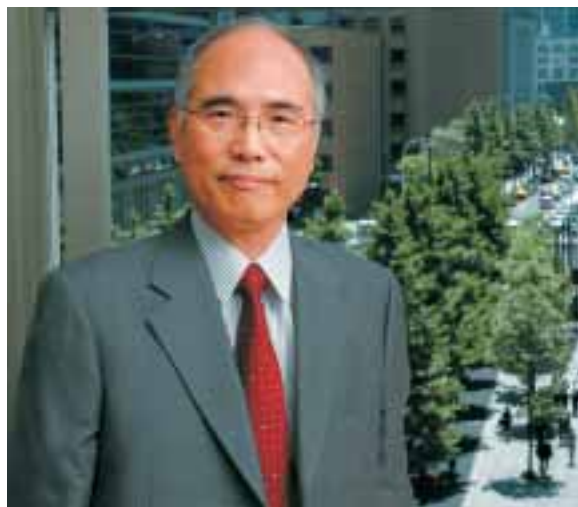
## Consolidation Changes Affecting the Areas and Periods Covered by Report

Kyowa Hakko has increased its percentage shareholding in Wuxi Kyowa Food Co., Ltd., and Shanghai Kyowa Amino Acid Company, Ltd. Information pertaining to these companies is accordingly included in this report.

In June 2004, all shares in the Hungarian company Agroferm

Hungarian-Japanese Fermentation Ltd. (Agroferm) were sold to the German company Degussa AG. In April 2005, all shares in Asahi Foods Products Co., Ltd. were sold to Kokubu & Co., Ltd. As a result, these companies are no longer included in the scope of this report.

# A Message from the President



## Operating Holding Company Structure

In April 2005 Kyowa Hakko shifted to an operating holding company structure. The change began in April 2004 when the chemical business was restructured into a separate company, Kyowa Hakko Chemical Co., Ltd. Our food business has now become Kyowa Hakko Food Specialties Co., Ltd., while Kyowa Hakko has become an operating holding company with responsibility for the development of our business activities in the two core areas of pharmaceuticals and bio-chemicals. This new structure will allow us to respond more rapidly to the needs of our customers. I am confident that it will also strengthen our competitiveness.

The Kyowa Hakko Group shares a corporate philosophy of contributing to the health and well-being of people worldwide by creating new value. Under the slogan "Kyowa Hakko, the Bio-Leader," our management strategy aims to take full advantage of the Company's strengths, with biotechnology as the core. Kyowa Hakko Chemical and Kyowa Hakko Food Specialties will target further growth and success as they work to create environment-friendly chemical products, and food products that combine good taste with health benefits.

## Companies "Allowed to Exist" by Society

The "ownership" of companies has become the focus of intense debate in recent years. I believe that companies exist not only for their shareholders and employees, but also for communities and customers. Companies are public institutions in society. This is reflected in an increasing emphasis on management transparency, corporate governance and compliance systems, and market accountability.

Kyowa Hakko was founded on a principle of contribution to society. This is reflected in our corporate philosophy. The Kato Memorial Bioscience Foundation, which was named after Dr. Benzaburo Kato, the founder of Kyowa Hakko, provides research grants to young researchers outside of the Company. Its memorial plaque is inscribed with Kato's own script: "We are allowed to exist." These words express Kato's belief that we should discard the prideful notion that we exist in isolation as individuals, and instead recognize that we depend on countless other people and should live

with a sense of gratitude. Similarly, no company can carry on its business activities in isolation. We depend on the support of others. In this sense, we need to recognize that it is society that allows us to exist. From this perspective, it is clear that while a company may be a private enterprise, it is also a public institution. Obviously, when we work in a public institution we need to abide by the rules of society, comply with laws and regulations and be considerate toward the environment. We must fulfill our responsibilities as citizens and live up to the trust placed in us.

## Group-level Initiatives to Enhance Sustainability

The Kyowa Hakko Group consists of manufacturing companies. Our mission is to work through our day-to-day activities to contribute to the health and well-being of people worldwide by supplying safe, high-quality products that provide new value. We achieve this by pursuing advances in fermentation technology, a field in which we are one of the leading companies in the world, and other core areas of technology.

By working in this way to raise the corporate value of the Kyowa Hakko Group and strengthen our bonds of trust with our customers and society, we believe that we can enhance our group-level sustainability. The entire Kyowa Hakko Group shares a keen awareness of our social responsibilities, including our responsibility to comply fully with laws and regulations, our responsibility to operate our factories safely, our responsibility to maintain high product quality, our responsibility to protect the environment, and our responsibility to supply our products reliably.

Recently the safety stance of businesses has been brought into question by a series of accidents involving well-known companies. I constantly remind all Kyowa Hakko Group employees involved in production activities that we need to maintain the trust placed in us by society by preventing accidents and chemical spills to ensure the safety of those who live near or work in our plants.

We must fulfill all of our responsibilities in relation to the environment, not only by protecting local environments, but also by helping to protect the global environment. The Kyowa Hakko Group has achieved zero emission status. In 1998 we launched a program

with the shared group-level goal of reducing our carbon dioxide emissions to the fiscal 1990 level. Having achieved these two goals in fiscal 2004, we are now working to reach even higher goals.

## Our Continuing Mission to Create New Value

The fundamental motivation for the business activities of the Kyowa Hakko Group is summed up most clearly in our corporate philosophy. In our pharmaceuticals business, we are continually developing new drugs, while building global alliances based on our Potelligent™ technology, which dramatically enhances the activity of antibodies. In the area of bio-chemicals, we are building a world market for amino acids and other fermentation products. We are also developing a unique healthcare business. One of our most significant recent achievements is the establishment of a revolutionary manufacturing method for dipeptides, which can be described as next-generation amino acids. Kyowa Hakko Chemical and Kyowa Hakko Food Specialties are both developing world-class materials, including lubricant raw materials for an ozone-friendly CFC-substitute air-conditioner and seasonings that bring out the best in food flavors.

With the completion of our transition to the operating holding company structure, we now need to refocus on the basic principles that inspired the creation of Kyowa Hakko. This will enable us to work with renewed resolve to create new value as we advance toward our goal of becoming a global leader in the field of biotechnology. We look forward to your continuing support and encouragement.

July 2005

Dr. Yuzuru Matsuda  
President & Chief Executive Officer  
Kyowa Hakko Kogyo Co., Ltd.



Corporate Philosophy

Kyowa Hakko will contribute to the health and well-being of people worldwide by creating new value in the pursuit of advancements in life sciences and technology.

(Amended in March 1999)



Management Guidelines for Social Responsibility

Kyowa Hakko has drafted seven management guidelines based on its Corporate Philosophy that bear on operations; its relationships with customers, shareholders, and employees as well as society; its corporate ethics; and the environment and safety.

(Introduced in March 1999)

These policies are partially outlined in various sections, including Corporate Ethics and Compliance (Page 16) and Social Performance Report (Pages 19, 28, 30).

# Guidelines for Safety and the Environment

## Management Guidelines for Safety and the Environment

"Work to protect the environment and maintain safety and also provide products with consideration of the environment and safety."  
(Introduced in March 1999)

## Declaration of Basic Policies for Health, Safety, the Environment and Product Safety

We declare with profound respect for all living things that, in accordance with the "Basic Policies for Health, Safety, the Environment and Product Safety," we will carry out Responsible Care activities extensively to preserve health, safety and the environment, as well as step up quality assurance to ensure the safety of consumers in our daily business activities.  
(Introduced in April 1996)



## Basic Policy on Health, Safety, the Environment and Product Safety

Kyowa Hakko's policy formulated at its establishment is to "contribute to the health and well-being of people worldwide by creating new value with the pursuit of advancements of life science and technology." Based on this policy, 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 whole life cycles of our products, from research and development through production, marketing, use and disposal, as well as by making efforts to ensure the quality and safety of our products, taking the safety of consumers as a matter of the greatest importance.

## Guidelines for Action

As our first rule, we should strictly control ourselves with profound respect for all living things and with modesty toward science, prove ourselves worthy of public confidence, and contribute to the growth of a healthy and affluent society. Therefore, we should advance our business activities under the following principles, with the protection of human beings and the environment, as well as the safety of consumers, as our first consideration.

- 1 Along with the establishment of the basic policies and control systems for health, safety, the environment and product safety as our highest principles in the management of Kyowa Hakko, we strive to enhance our employees' consciousness of health, safety, the environment and product safety by making these principles generally known to them and to advance our activities under these principles from a global standpoint.
- 2 We observe international regulations, as well as domestic laws, rules, regulations and agreements relevant to health, safety, the environment and product safety, in cooperation with relevant foreign and domestic agencies and organizations and make efforts to raise our level of control over these principles by observing our self-imposed control standards and utilizing auditing systems.

- 3 Together with our efforts to ensure the safety of our business activities and to reduce negative impact on the environment, we strive to ensure the quality of health, safety, the environment and product safety throughout the whole life cycles of our products by engaging in overseeing the purchase of raw materials; the production, transportation and sale of products; and the use and disposal of products by our consumers.

- 4 We carry out assessments of health, safety, the environment and product safety prior to the development of new technologies and products, the transfer of technologies and the start of novel businesses. These assessments enable us to ensure our products meet the highest standards with respect to such technologies throughout the whole life cycles of such products commencing in the planning stage.

- 5 We contribute to health, safety, the environment and product safety on a global scale by working actively toward the development of "earth-friendly" technologies and products as well as toward the development of energy-conservation and resource-conservation technologies.

- 6 We concentrate our efforts on research and development to keep abreast of scientific progress, and we strive to strictly assure the usefulness and safety of our products.

(Introduced in January 1999)

# Overview of Activities

The Kyowa Hakko Group will continue to respond to the expectations of its customers and the needs of society by working in good faith and partnership to contribute to the health and well-being of people worldwide.



## The Kyowa Hakko Group



### Kyowa Hakko Pharmaceuticals Business Unit

**We will use our original technology and ideas to create products that will enhance the lives of individuals.**

Focusing primarily on cancer, the central nervous system diseases and allergies, Kyowa Hakko is using antibody technology and other advanced technologies to create revolutionary therapeutic agents through research and clinical development activities on a global scale. Kyowa Medex Co., Ltd., a member of the Kyowa Hakko Group, contributes to the detection of disease by developing, manufacturing and selling in vitro clinical diagnostic reagents.

### Kyowa Hakko Bio-Chemicals Business Unit

**Bio-technology is helping to enhance the vitality and beauty of life.**

Kyowa Hakko supplies many industries with amino acids, nucleic acid substances and other products produced using its world-class fermentation technology. Amino acids are produced under a global production network with facilities in Japan, the United States and China. By developing a new manufacturing method for dipeptides, which are made by joining two amino acids together, Kyowa Hakko has opened up an entire new spectrum of uses for amino acids.

### Kyowa Hakko Chemical

**Our mission is to create environment-friendly materials so that we can continue to live in harmony with the Earth.**

Solvents, plasticizers and plasticizer materials play an integral role in industrial activities through their use in products ranging from automobiles to construction materials. Kyowa Hakko Chemical is also actively developing environment-friendly products in the area of specialty chemicals. These include isononanoic acid, which is used as a raw material for CFC-substitute air conditioner lubricant materials.

### Kyowa Hakko Food Specialties

**We will continue to enhance food flavor and safety by exploring the fundamental characteristics of foods.**

Kyowa Hakko Food Specialties sells natural seasonings based on its unique fermentation technology, as well as commercial brewed seasonings made using brewing technology. Other products, such as baker's yeast and bread mixes, are used to create bread products with a variety of flavors and aromas. We will continue to respond to the changing food needs of consumers by developing products and ideas to enhance quality and flavor while ensuring food safety.

# Environmental and Social History

“When asked for advice about which of two research subjects to choose, our founder told the person concerned to choose the subject that would bring greater benefit to the world.”

- Business events
- R&D events
- Social contribution events
- Environmental events

**1956**  
 ● **Kyowa Hakko invents the world's first fermentation-based production method for L-glutamic acid, pioneering the use of fermentation technology to produce amino acids.**

Fermentation produces less waste than the traditional method based on extraction from wheat and soy proteins. This revolutionary manufacturing method is also economically superior. As a result of this invention, it has become possible to mass-produce various amino acids, including lysine and ornithine.



● An oxo process is used to recover CO<sub>2</sub>.

● Kyowa Hakko becomes the first company in Japan to receive an award from the Japan's Environment Agency in recognition of its achievements in recycling fermentation waste liquids and improving water quality.

● Production of organic fertilizer using recycled fermentation mother liquor at the Hofu Plant.

● Kyowa Hakko Kogyo Co., Ltd. is established.

1948 > 1949 > 1951 > 1956 > 1958 > 1964 > 1966 > 1970 > 1977 > 1988 >

● Establishment of Japan's first mass-production system for the manufacture of acetone and butanol from molasses. This technology will be the key to Kyowa Hakko's future success.

● Kyowa Hakko receives the Japan Academy Prize for research on the production of amino acids using fermentation.  
 ● Kyowa Hakko invents a fermentation-based production method for L-lysine.  
 ● Kyowa Hakko receives the Chemical Society of Japan's Award for Technical Development and Okochi Memorial Prize in recognition of its invention of the fermentation-based method for the production of L-glutamic acid.

● The first Asahi Young Session lecture is presented.

**1951**  
 ● **Kyowa Hakko makes an important contribution to the fight against tuberculosis by becoming the first manufacturer in Japan to mass-produce streptomycin, using technology licensed from Merck & Co. of the United States.**

Kyowa Hakko decides to mass-produce streptomycin, a powerful new weapon against tuberculosis, which was previously believed to be incurable. It begins production after overcoming numerous challenges in relation to financing, plant construction and technology licensing.

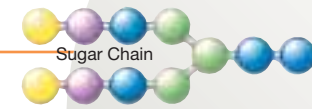


**1988**  
 ● **The Kato Memorial Bioscience Foundation is established.**

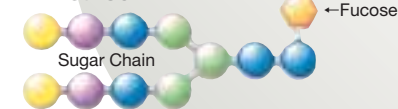


The Kato Memorial Bioscience Foundation is created in 1988 to fulfill the wishes of the late Dr. Benzaburo Kato, founder of Kyowa Hakko. Its mission is to contribute to the advancement of science and technology by providing grants for bioscience research and by undertaking educational activities.

● **Potelligent™ technology**



● **Normal manufacturing method**



**2002**

● **Kyowa Hakko establishes Potelligent™ technology—a revolutionary antibody manufacturing system that dramatically enhances the activity of therapeutic antibodies.**

Therapeutic antibodies are drugs that use antibodies to target foreign substances in the body. Slight changes to the sugar chains that attach themselves to antibodies dramatically increase the destructive power of the antibodies. This technology is now being used worldwide to develop numerous types of therapeutic antibodies.

● Developed and commercialized Landfill Liner, polyurethane sheets for final waste-disposal sites.  
 ● Developed and commercialized new raw lubricant for CFC-substitute refrigerant.

● Implementation of Responsible Care.  
 ● Developed and commercialized phytase, an enzyme used in feed additives to prevent environmental damage caused by the livestock industry.

● Kyowa Hakko holds its first competition for essays on the theme of “Creating a Brighter Future in the 21st Century through Science.”  
 ● Vast reduction of COD levels in wastewater.  
 ● Installation of cogenerator at the Chiba Plant.

● Installation of energy-saving air distributors for wastewater treatment facilities at the Yokkaichi, Hofu and Fuji plants.  
 ● Launch of mycotoxin analysis method onto market.

1993 > 1996 > 1997 > 1998 > 1999 > 2000 > 2002 > 2003 > 2004 > History

● Commercialized a new manufacturing method for hydroxyproline, an amino acid that uses no collagen and causes little environmental damage.

● Simplified and reduced the volume of packaging used for pharmaceuticals and foods.

● The Bio-Adventure Mobile Laboratory program begins.  
 ● Kyowa Hakko establishes a system to recycle *shochu* distillate, allowing the cessation of ocean discharges.

● Kyowa Hakko receives the Technology Award from the Japan Scientific Feeds Association in recognition of its development and popularization of animal feeds designed to reduce environmental loads, through business activities centering on amino acid and enzyme products used in animal feeds.

● Implementation of deodorizing facilities at the Hofu Plant.

● Publication of the Health, Safety, and the Environment Report.



Using fermentation waste as fertilizer

**2004**  
 ● **Zero emission status is achieved three years ahead of schedule.**

The goal of reducing final disposal at landfills to 0.1% of the 250,000 tons of total waste in fiscal 2000 (250 tons) or less is achieved three years ahead of schedule, with a total of 209 tons in fiscal 2004. The Kyowa Hakko Group begins to work toward an even more ambitious target.

# Corporate Governance

## Basic Approach to Corporate Governance

Kyowa Hakko's corporate philosophy is to contribute to the health and well-being of people worldwide by creating new value in the pursuit of advancements in life sciences and technology. Our basic approach to corporate governance is to establish the management organization and structures and implement the measures needed to realize this philosophy.

## Strengthening Corporate Governance

Kyowa Hakko operates under the "company with auditors" system. It has four auditors (as of June 28, 2005), of whom three are outside auditors. In accordance with audit policies determined by the Board of Auditors, 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. Kyowa Hakko has also introduced an executive officer system to speed up decision-making and strengthen the performance of operations.

On April 1, 2005, Kyowa Hakko established the Audit Department. It works with the auditors to coordinate the internal audit functions of the Kyowa Hakko Group and check that internal governance systems are properly structured and functional.

## Managing Risk through In-House Committees

Kyowa Hakko has established the following in-house committees to deliberate basic policies on management issues and develop responses to a variety of potential

risk factors. These committees submit annual reports on their activities to the Board of Directors.

**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 employee. Focuses on the soundness and appropriateness of the corporate activities.

**Environment and Safety Committee:** One of the President's advisory groups, debates basic policies relating to environmental protection and safety.

**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.

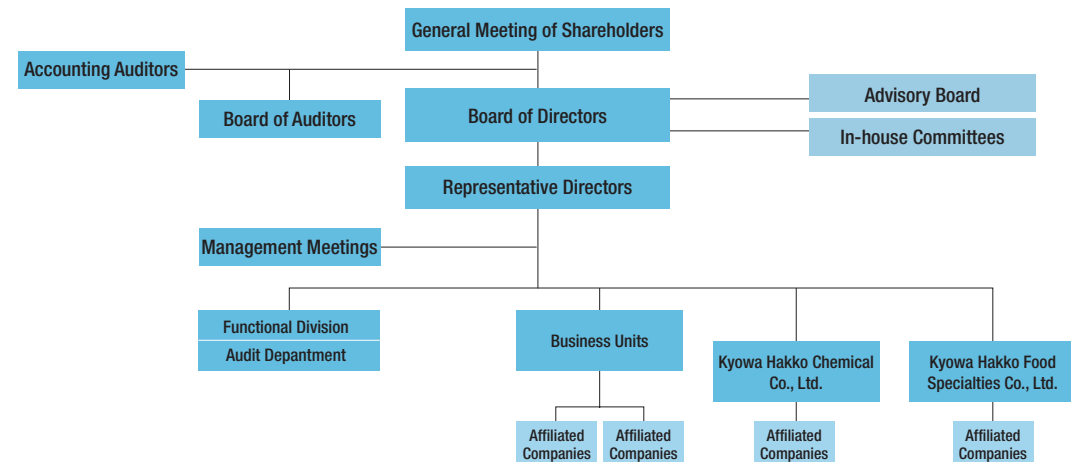
**Financial Management Committee:** Focuses on the efficiency of financing activities and discusses finance-related risks.

**Information Security Committee:** Discusses basic policies relating to the protection and handling of confidential information held by the Kyowa Hakko Group.

## Establishment of Advisory Board

Kyowa Hakko has established an Advisory Board made up of four outside advisors. Its role is to strengthen management culture and improve management transparency and soundness by providing outside perspectives on group management issues and other matters.

### Corporate Governance Organization



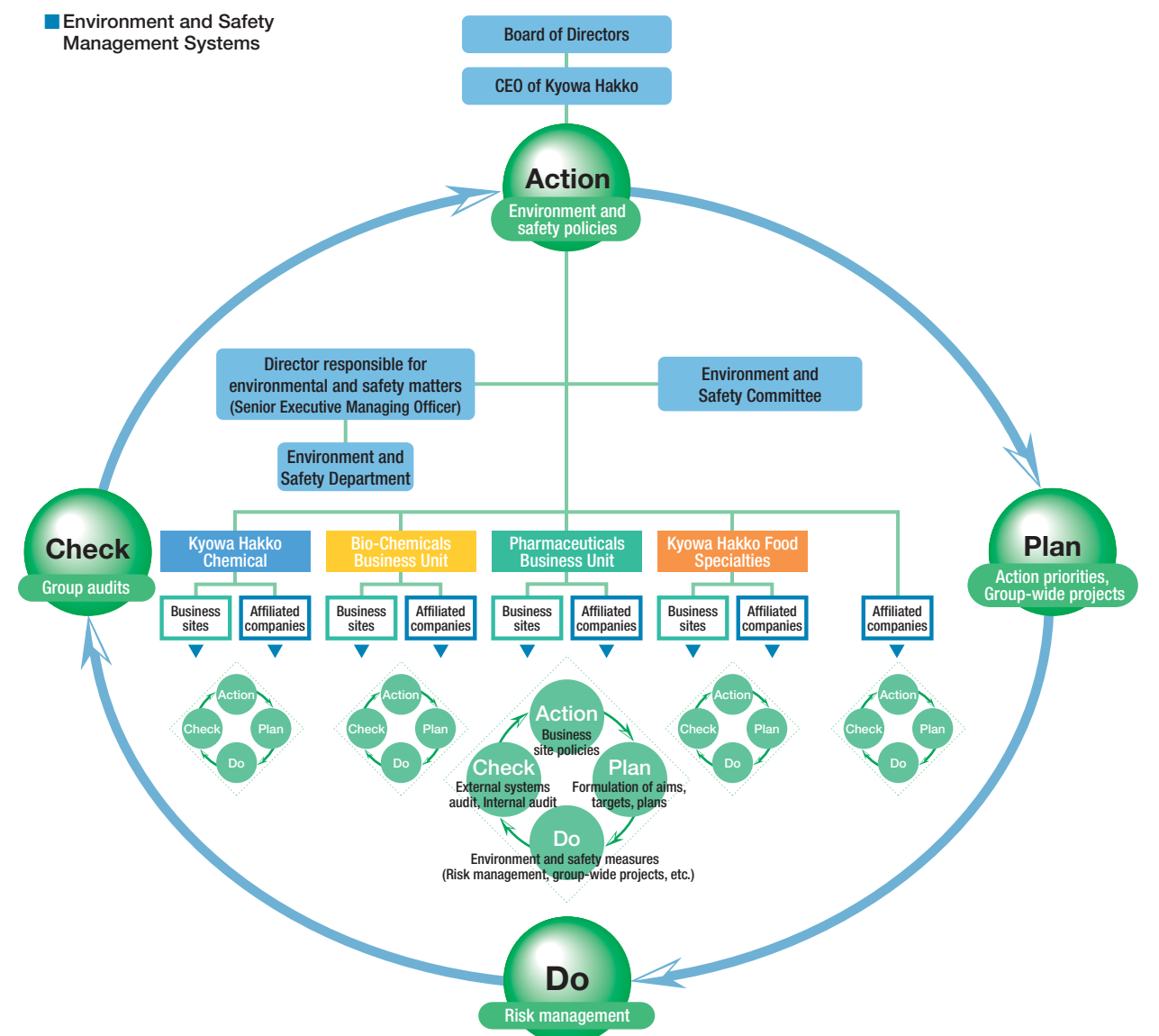
# Environment and Safety Management Systems

The Kyowa Hakko Group has built an environment and safety management system based on the integration of ISO 14001 and Occupational Safety and Health Management Systems (OSHMS) in order to focus on continual improvement in four areas: environmental protection, safety and health, accident prevention and product safety. Risk management activities are implemented through plan-do-check-action (PDCA) cycles.

Under the Kyowa Hakko Group's environment and safety policies, which are determined by the CEO of Kyowa Hakko, action priorities are set by the Environment and Safety Committee. Members of this committee include the presidents of the Pharmaceuticals

Business Unit and the Bio-Chemicals Business Unit, the presidents of Kyowa Hakko Chemical and Kyowa Hakko Food Specialties, the executive with responsibility for environment and safety matters, the human resource executive, and a union representative. Based on these group policies and action priorities, respective environment and safety policies and targets are then established for the Pharmaceuticals Business Unit, the Bio-Chemicals Business Unit, Kyowa Hakko Chemical and Kyowa Hakko Food Specialties. These form the basis for the policies, targets and plans that guide the activities of individual business sites and affiliated companies. ★1

★1 In this report, "affiliated companies" refers to all Kyowa Hakko Group companies except Kyowa Hakko Chemical and Kyowa Hakko Food Specialties.



# Joint Environmental and Safety Assessments

Environment and Safety Management Systems

The activities of Kyowa Hakko business sites and affiliated companies are subject to internal audits by the environment and safety departments of their respective divisional headquarters. The activities of divisional headquarters, business sites and affiliated companies are also monitored by means of group audits conducted by the Environment and Safety Department. Any problems identified through these audits are systematically rectified, and audit results are reflected in yearly environmental and safety policies. There were no major legal infringements or environmental accidents in fiscal 2004.

### Kyowa Hakko Group Environment and Safety Audits

<b>Scope</b>	All sites of Kyowa Hakko, Kyowa Hakko Chemical and Kyowa Hakko Food Specialties (9 plants, 2 research laboratories, 8 sales bases, headquarters) 15 consolidated and non-consolidated subsidiaries (production, engineering, transportation)
<b>Items</b>	Effectiveness of management systems, progress on environment and safety policies, fiscal year policies and projects, management of site facilities (compliance, performance, emergency responses, etc.)
<b>Auditors</b>	Environment and safety director, qualified ISO auditors, divisional environment and safety officers, local union representatives
<b>Frequency</b>	Business sites, consolidated and non-consolidated subsidiaries in Japan: once a year Subsidiaries outside Japan: once in three years

### Main Priorities identified through Kyowa Hakko Group Environment Audits

Consideration of conversion to natural gas (Hofu)
Improvement of efficiency of wastewater treatment facilities (Hofu, Ube, Chiba)
Preparations for VOC regulations (Chiba)
Reduction of wastewater load and waste materials (affiliated companies)
Promotion of environmental consideration in administrative operations (sales bases)

### Main Priorities identified through Kyowa Hakko Group Environment Audits

Improvement of risk assessment system (Fuji, Kyowa Medex)
Reinforcement of chemical substance management (Ube, Sakai)
Reinforcement of safety management for contracted work (Yokkaichi, Tsuchiura)
Improvement of risk management (affiliated company)
Improvement of road safety activities through strengthened line guidance by sales manager (sales bases)
Reinforcement of earthquake countermeasures (general)

In fiscal 2004, there were eight complaints about Kyowa Hakko Group plants in and outside Japan, compared with six in fiscal 2003. These consisted of two complaints about noise, four complaints about odors and two about other issues. The Kyowa Hakko Group deeply regrets the inconvenience caused to residents in areas around its facilities. Prompt action was taken to prevent recurrences of these problems. The aim is to reduce the number of complaints to zero through preventive measures.

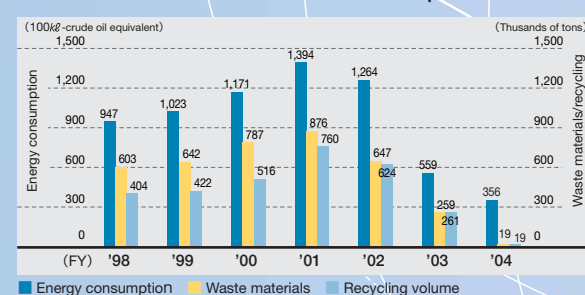


A Group audit at the Ube Plant

### Activities of the Environment and Safety Department

- Planning and proposal of the environment and safety policies and support for their implementation
- Formulation and revision of group regulations relating to the environment, safety and security
- Operational support for the environment and safety management systems
- Support for the environment and safety risk management of production processes
- Implementation of or support for environment, safety and security audits
- Communication with government agencies and other organizations, information gathering and distribution

### Energy Consumption, Waste Materials and Recycling Volumes at Production Sites Outside Japan\*1



Energy consumption is declining because of the shift to high added-value products.

\*1 Production sites are listed on Page 1.

## BioKyowa, Inc. (U.S.A.)

BioKyowa, Inc. is based in Cape Girardeau, Missouri. The company, which initially focused on producing lysine for animal feeds, has been manufacturing amino acids since 1984. Today it manufactures a variety of amino acids for use in health foods and industrial products. BioKyowa achieved HACCP certification in 2004 and is currently working toward ISO 9001 certification. Another goal is the introduction of ISO 14001.

As in 2003, it conducted a joint environmental and safety assessment with the Kyowa Hakko parent company in May 2005.

### Results of the Joint Environment Assessment

Using corn syrup as a raw material, BioKyowa produces amino acids by fermentation. Mother liquor and microorganisms produced as byproducts of this process are recycled as fertilizers. No toxic chemical substances are used in amino acid fermentation, but BioKyowa conducts regular soil surveys to ensure the safety of its operations. Waste materials total about 20,000 tons annually, of which 99% is recycled as fertilizers.



A fermentation byproduct tanker (right) and sprayer (left)

Because the plant is powered by natural gas, the atmospheric load is minimal. In 2004, there were two complaints about odors. These problems were remedied by balancing the load in the wastewater treatment facilities from which the odors emanated.

### Results of the Joint Safety Assessment

Based on the program of Occupational Safety & Health Administration (OSHA) of the U.S. Department of Labor, on-site checks have shown that BioKyowa applies stringent management procedures, including steam valve lockout procedures, tagging of hazardous items and the use of seatbelts during forklift operation.

There have been no major workplace accidents, but the number of incidents is slightly above the average in Japan. In addition to top-down management, BioKyowa is currently implementing bottom-up initiatives to reduce accidents. These include KY (*Kiken Yochi* = risk prediction) activities, as well as an improvement suggestion program.

These efforts have started to produce results. The number of workplace accidents, which was in double figures until 2002, was in single figures in both 2003 and 2004.



Valve lockout system

## Select Supplements, Inc. (U.S.A.)

Select Supplements, Inc. is a GMP certified nutraceuticals contract manufacturer located in Carlsbad, California. The company manufactures hard shell/soft gel nutraceutical capsules and nutraceutical powder blends. On-site assessments have shown that the company maintains appropriate safety management in accordance with OSHA programs.



Select Supplements, Inc.



Conducting joint environmental and safety assessments



## Quality Risk Management

### Quality Risk Management Systems

When there are serious product quality situations, such as product recalls, the Quality Assurance Department works closely with the business unit concerned (the Pharmaceuticals Business Unit, the Bio-Chemicals Business Unit, Kyowa Hakko Chemical and Kyowa Hakko Food Specialties). An emergency action committee is established to consider countermeasures, including the customer response. Such situations are immediately reported to the President and the relevant executives to ensure consistency in the corporate response.

### Developing Quality Assurance Standards

Prior to its transition to an operating holding company structure, Kyowa Hakko reviewed and revised its quality assurance standards to ensure that they would be appropriate under the new structure. This work has resulted in clearly defined roles, with business units taking responsibility for quality assurance in their business operations, while the Quality Assurance Department coordinates group-level risk management efforts relating to quality assurance.

### Quality Audits of Business Units

In fiscal 2004, Kyowa Hakko began to conduct yearly quality audits of business units as part of its group-level risk management activities relating to quality assurance. The audit checked progress on the implementation of the fiscal 2004 quality assurance priority policies in relation to each business unit's quality assurance risk management and quality assurance systems. A common issue identified was the need to formulate reporting standards for affiliated companies in the event of serious quality assurance situations. This work is now in progress.

### Responding to Product Complaints

The Kyowa Hakko Group works actively to ensure customer satisfaction by reducing product complaints. In fiscal 2004 these efforts brought a 20% year-on-year reduction in the number of product complaints. There will be continuing efforts to achieve further reductions.

Customer confidence is achieved by promptly inves-

tigating product complaints and providing reliable reports. Kyowa Hakko is working to improve its complaint response performance by setting targets for the number of days passing between the complaint and the response, as well as numerical targets for the customers' acceptance of the supplied responses.

### Improving Quality Assurance in the Pharmaceuticals Business Unit

Kyowa Hakko employs approximately 900 medical representatives (MRs) in its Pharmaceuticals Business Unit. They are continually supplying information about Kyowa Hakko pharmaceuticals to physicians and pharmacists. Information obtained through this communication with medical professionals is classified into requests concerning drug formulation and packaging, assessments of product briefings and product assessments. This vital information is immediately distributed to the relevant departments for use in product improvements. The photographs below show modifications made to improve the product recognition and usability of the INOVAN® Injection syringe.



## Corporate Ethics and Compliance

### Promoting Corporate Ethics

Kyowa Hakko recognizes the importance of corporate ethics and compliance. To raise awareness among its employees, it has compiled and distributed a range of information materials, including Ethical Principles, Codes of Ethical Conduct for Employees and ethical guidebooks.

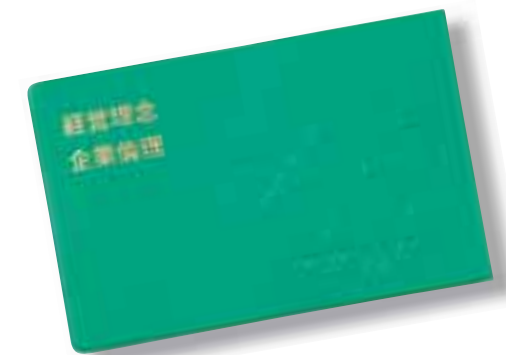
In 1998 Kyowa Hakko established the Corporate Ethics Committee to strengthen the public reputation of the Kyowa Hakko Group in Japan by promoting ethical awareness and ensuring compliance. This committee serves as a forum for discussion among corporate directors and employees. Where necessary, outside participants, such as attorneys and academic experts, are also brought into the process.

The Corporate Ethics Department was established in 2001. Its mission is to promote ethical behavior in corporate activities by providing education and training for employees. As a provider of advice, the Corporate Ethics Department operates a help line and an in-house website. In addition to these efforts to raise awareness of corporate ethics, the Department also promotes related activities throughout the Kyowa Hakko Group in Japan.

In 2005, Kyowa Hakko created a Corporate Ethics Department hotline, in addition to its existing hotlines to legal advisors and the director responsible for corporate ethics. This service is available not only to Kyowa Hakko executives and employees, but also to temporary employees of Kyowa Hakko Group companies in Japan. Kyowa Hakko has also diversified reporting methods as part of its continuing efforts to enhance the systems used by

individual employees of the Kyowa Hakko Group in Japan to make in-house and external recommendations about issues that concern them.

In April 2005 the Personal Information Protection Act took effect in Japan. The Kyowa Hakko Group in Japan is actively developing the organizational structures and rules required for compliance with this law.



Kyowa Hakko employees in Japan receive this guide to Kyowa Hakko's management philosophy and policies. This also incorporates the "Kyowa Hakko Ethical Principles."

### Activities of the Corporate Ethics Department

- Planning and drafting of policies and measures relating to corporate ethics
- Formulation and amendment of regulations relating to corporate ethics
- Guidance, advice, education and promotion relating to corporate ethics
- Proposal and implementation of audit plans relating to corporate ethics
- Communication with government agencies and groups involved in corporate ethics
- Collection and distribution of information relating to corporate ethics, and responding to social needs in this area
- Secretariat services for committees and meetings relating to corporate ethics

### Management Guideline and Points

(Extracts from the "Kyowa Hakko Ethical Principles")

#### Management Guideline:

We will respect corporate ethics and also fulfill social responsibilities.

#### Key Points:

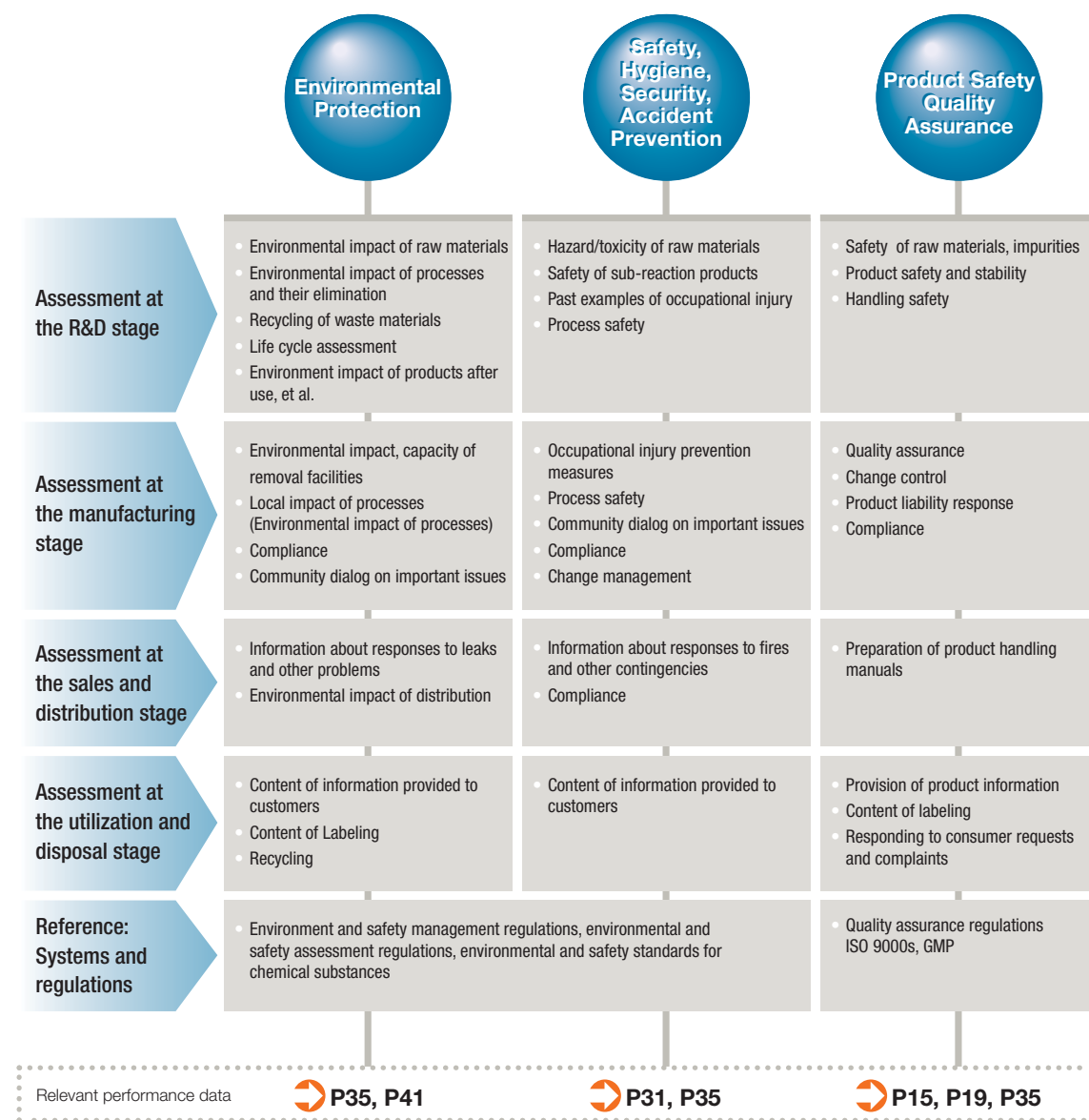
- In all areas of activity, we will comply with laws and other requirements, observe voluntary rules, and strive to maintain good ethical standards in its business activities.
- While recognizing that an enterprise is an economic entity dedicated to the pursuit of profit, we will reject any profit or advantage that can only be gained through illegality or unethical behavior with respect to laws or ethical principles.
- In all of our business activities, we will deal and compete fairly, transparently and freely, while maintaining sound and appropriate relationships with all concerned, including politicians and government officials.
- We will fulfill our accountability obligations as a company trusted by its internal and external stakeholders, by actively disclosing accurate information in a timely manner.
- As a corporate organization, we will resolutely oppose anti-social forces and groups that threaten the order and safety of the civil society. We will not entertain any unlawful or unethical demands whatsoever.
- We will respect the humanity and individuality of employees as autonomous individuals. We will reject unfair discrimination and provide quality workplaces based on a high awareness of the human rights and safety of employees.

# Environmental, Safety and Product Safety Assessments

We aim to supply our customers with products that are excellent in terms of quality and functionality. They are manufactured with proper care for the environment, overall safety and product safety.

We have established the Basic Policies relating to the environment, safety and product safety, and place first priority on the customer in our quality assurance

activities, exercising responsible care through wide-ranging consideration for the environment and safety. We ensure the fulfillment of this commitment by implementing stringent assessment procedures at all stages of the product life cycle, from research and development through to use and disposal.



Our source of inspiration and energy is the trust that customers and communities place in us.

## Social Performance



# The Kyowa Hakko Group Pledge

## New Group Structure

Kyowa Hakko has switched to an operating holding company structure. This change is seen as an opportunity to work toward new growth and success by reaffirming the values on which Kyowa Hakko was founded. To ensure that this commitment is clearly understood by society and our customers, we have adopted a pledge based on the

Corporate Philosophy and Management Guidelines for Social Responsibility of the Kyowa Hakko Group.

The new Kyowa Hakko Group will work through its ongoing activities to build and consolidate unshakeable bonds of trust with consumers and society, and to contribute to the health and well-being of people worldwide by creating new value.

### The Kyowa Hakko Group Pledge

**“When asked for advice about which of two research subjects to choose, our founder told the person concerned to choose the subject that would bring greater benefit to the world.”**

◆ In the early postwar period, Kyowa Hakko was determined to become the first Japanese company to mass produce streptomycin so that it could help to eradicate tuberculosis from Japan.

We were also the first company in the world to succeed in the industrial production of amino acids using fermentation.

◆ Our growth has been driven primarily by fermentation technology. We have successfully used new biotechnology to develop many advanced products.

◆ Today we look out across the vast new frontiers of life science and technology.

◆ We will work with a renewed entrepreneurial spirit to develop unique innovative products through global collaboration and to supply those products as rapidly as possible to those who need them.

◆ We will explore new fields of activities and create new businesses and markets.

◆ We will work in good faith and partnership to contribute to the health and well-being of people worldwide by responding to the expectations of our customers and needs of society.



A presentation conducted by a medical representative

#### Management Guideline and Points Customers

##### Management Guideline:

We will provide products, services and information that are superior in terms of quality and function in accordance with a policy of placing top priority on customer satisfaction.

##### Points (Extract):

- We will create products, services and information that satisfy customers, are at the forefront of the era and have new value.
- We will diligently work toward Group-wide cooperation to disseminate customer feedback with the aim of quickly responding to customer needs and complaints.
- We will actively collect safety information and incorporate it into products, services and information while making the necessary disclosures to customers.
- We will implement such international quality assurance systems as GMP, ISO and HACCP to improve manufacturing and quality management.

# Wishing Good Health to the People of the World

## Pharmaceuticals—Defined as “Chemicals combined with information”

Pharmaceuticals can function properly only if used correctly on the basis of information about their characteristics, including effects, benefits, usage, dosage, mechanisms of action and side-effects.

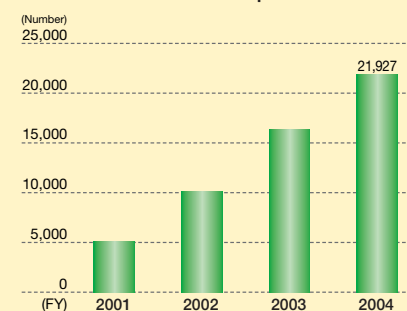
This information is conveyed by medical representatives (MRs), of which there are 900 within Kyowa Hakko. Their vital social mission is to contribute to the advancement of patient-focused medicine. MRs also actively seek out the views of patients and medical professionals to provide feedback for the development of truly useful pharmaceutical products.

MRs function as Kyowa Hakko’s corporate representatives to the medical community. They work closely with supporting departments and offices to provide products, services and information promptly and reliably.

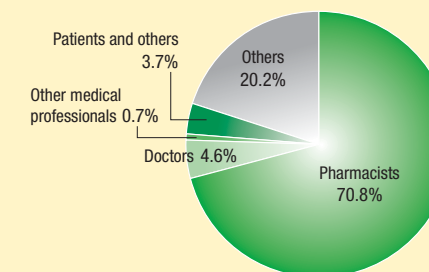
## Ensuring Appropriate Use of Pharmaceuticals

Information about the appropriate use of pharmaceuticals is provided in various forms, including prescribing information, interview forms, product overviews and instruction sheets. Kyowa Hakko also provides information in response to telephone, e-mail and mail inquiries. This work is carried out by the Medical Information Center. There has been a gradual increase in the number of inquiries handled, reaching a total number in excess of 20,000 in fiscal 2004. Recent trends reveal Japan’s changing social needs. For example, approximately 70% of inquiries in fiscal 2004 were from pharmacists, while the number of inquiries from patients and their families doubled over the previous year’s level.

#### Growth in Number of Inquiries



#### The Number of Telephone Inquiries



## Wishing Good Health to the People of the World

### Information Resources for Medical Professionals

Kyowa Hakko provides specialized information through journals for medical professionals, including *Medico* for physicians and *Yaku datsu Hanashi* ("Useful Information" for pharmacists). *Yaku datsu Hanashi* is especially popular because of its emphasis on the provision of medical care from the patient's perspective. It also maintains a library of medical videos.

### Large-scale Post-marketing Clinical Trial

Kyowa Hakko conducts a large-scale clinical trial as part of its efforts to develop medical treatments optimized for Japanese patients. One goal is to establish significant evidence<sup>★1</sup> about high blood pressure in Japan. With the support of the Japanese Society of Hypertension, Kyowa Hakko is conducting the COPE Trial (Combination Therapy of Hypertension to Prevent Cardiovascular Events Trial) in collaboration with Yamaguchi

University. The trial plans to attract 3,000 subjects, who will be monitored over a three-year period. This is the first time that a study of this type has been conducted in Japan to ascertain the effectiveness of combinations of antihypertensive drugs in the prevention of cardiovascular events. There is intense interest in this trial, which may, depending on the data collected and studied, lead to changes in hypertension treatment in Japan. There is also interest in the method used to implement the trial, which involves collaborative diagnosis by hospitals and clinics in various regions.

★1 Evidence: The scientific basis for the effects of therapies and drugs

### Our Mission as an R&D-centered Enterprise: To Benefit Society through the Creation of Effective New Pharmaceuticals

Kyowa Hakko believes that new possibilities are created when the seeds of new innovations are matched with the needs of society. Through its Pharmaceutical Seeds Contest, Kyowa Hakko invites researchers working in corporate and university research institutes to submit pharmaceutical development concepts. In fiscal 2004, there were over 200 entries. By matching the new ideas of researchers with business needs, Kyowa Hakko creates new possibilities and then works to develop those possibilities in cooperation with the ideas' creators. This concept typifies the Kyowa Hakko approach.

#### Yasuhiro Amano

Manager, Safety Assessment Department  
Pharmaceuticals Business Unit, Kyowa Hakko

Every day we receive safety information about drugs that are undergoing clinical testing in various parts of the world. The global drug development activities of the Kyowa Hakko Group depend on the ability of our safety data management system to gather, analyze and assess this safety information accurately and promptly. Of course, the language used on this system is English. Our staff works within a global network of collaboration.

### Global Collaboration on Pharmaceutical Development

Kyowa Hakko's clinical development of candidate substances is based on collaboration among staff in Japan, Europe and North America. Its efforts to make new drugs available for use in therapy as quickly as possible also include the ongoing improvement of infrastructure, including the development of safety information management systems and document management systems.

Before administering new drugs to human subjects during the pharmaceutical development process, Kyowa Hakko verifies the effectiveness of new drugs and rigorously assesses their safety by means of animal testing. To ensure that these

tests are conducted appropriately, Kyowa Hakko has formulated Ethical Standards for Animal Testing, based on legal and academic guidelines, as well as Animal Testing Guidelines for individual business sites. These are administered by committees established at the head office and site levels, which monitor the implementation of Kyowa Hakko's clearly defined requirements concerning the ethics and effectiveness of animal testing. Researchers are required to consider alternatives to animal testing, to ensure that the scale of tests is appropriate, to avoid unnecessary suffering, and to follow proper animal management procedures. Kyowa Hakko is continually working to reduce the number of animals used for testing by developing alternative methods, such as the use of cultured cells.



User training for the safety data management system



#### Patricia Martin (Center) Senior Manager, Kyowa Pharmaceutical, Inc.

The Safety Departments at KHK, KPI and KHUK have validated and implemented a safety data management system to facilitate the processing and reporting of the safety information in clinical trials. This database satisfies the legal requirements for submission of the safety information to participating health authorities, and serves as an extensive safety information base for monitoring the safety of the pharmaceutical products.



# Healthy Daily Lives

## The Health Benefits of Amino Acids are Widely Recognized

Today an extremely wide range of amino acid products are available on the market. In recent years ornithine and gamma-amino butyric acid (GABA) have been approved for use as food ingredients. To enhance the usability of these products for its corporate customers, Kyowa Hakko has undertaken detailed studies concerning their safety, functions and properties, from which a variety of papers and other information for product development technicians are produced.

In addition to amino acids, Kyowa Hakko manufactures a wide range of other biological substances, including nucleic acids, using its fermentation technology. Examples include Citicoline (CDP-choline:Cognizin™), which is known to enhance brain functions, improve memory and learning abilities and prevent brain cell damage. Though Citicoline is used medically in Japan, its benefits are not widely known in the United States. Kyowa Hakko is working to disseminate knowledge about this product and to promote its use as a health food in the United States through research, public information and advertising activities.



**Larry Jackson** BioKyowa, Inc.

I started to work here at BioKyowa, Inc. in September 2000. In the short time that I have been here I have seen a lot of things happen. We are always trying to improve the ways in which we do things. There is a great emphasis on plant-wide safety, which helps to improve the work environment for everyone here. We have an employee suggestion program that seems to be gaining ground and getting more input from within the plant.

We have obtained HACCP accreditation, and are striving to obtain ISO 9001 accreditation as well. On a personal note, I have been able to receive training on PLC programming, electrical maintenance and electrical safety, all of which benefit me while performing my tasks here. When the going gets tough, everyone works together to try and get things back to where they need to be. It is truly a joy to work with everyone here. Here's to the future.

## Activities of Healthcare Research Laboratories

In April 2004, the healthcare activities of the Kyowa Hakko Group, which were previously divided among several business units, were integrated. This change was accompanied by the establishment of an integrated healthcare research and development organization at the Tsukuba Research Laboratories, which are now the Healthcare Research Laboratories.

Many corporate customers are invited to participate in wide-ranging discussions with Kyowa Hakko. The Healthcare Research Laboratories have display panels and exhibits to help visitors learn about Kyowa Hakko's research and marketing activities.

Based in the beautiful rural environment of Tsukuba City, the Healthcare Research Laboratories are engaged in a variety of research activities, including exploratory research into the functions and basic mechanisms of biological substances, and studies concerning the activities of various combinations of health-food ingredients in the human body. Another important area of research is technology for the production of health foods in various forms, such as tablets, drinks and powders. The information-related activities of the Healthcare Research Laboratories include the compilation of consumer-oriented reports on research in these fields.

# BioChemicals

## Amino Acid Ornithine—Bringing Unique Benefits to the Body

Amino acids are key constituents of proteins, nutritional substances that function as essential building blocks of the human body. Some estimates indicate that there are more than 500 amino acids in nature, of which 20 are involved in the production of proteins. Each of these 20 amino acids has different functions. While there are many research reports about the nutritional and physiological effects of amino acids, the only products available off the shelf in the past were ones that were a mixture of a limited number of amino acids or protein hydrolysates that contained a large number of amino acids.

Remake® Ornithine is a newly developed product resulting from Kyowa Hakko's emphasis on the properties of individual amino acids, rather than amino acids in

general. It was created to allow users to benefit from the unique functions of a single amino acid, Ornithine. Remake® Ornithine is a unique supplement for those who wish to maintain good health. It is sold in Japan, and only by mail order, which provides a channel for direct communication between Kyowa Hakko and consumers. Kyowa Hakko is able to offer consumers ideas about the regular use of amino acid products to promote healthy living. Health information gathered from consumers is a valuable resource for the development of truly useful products.

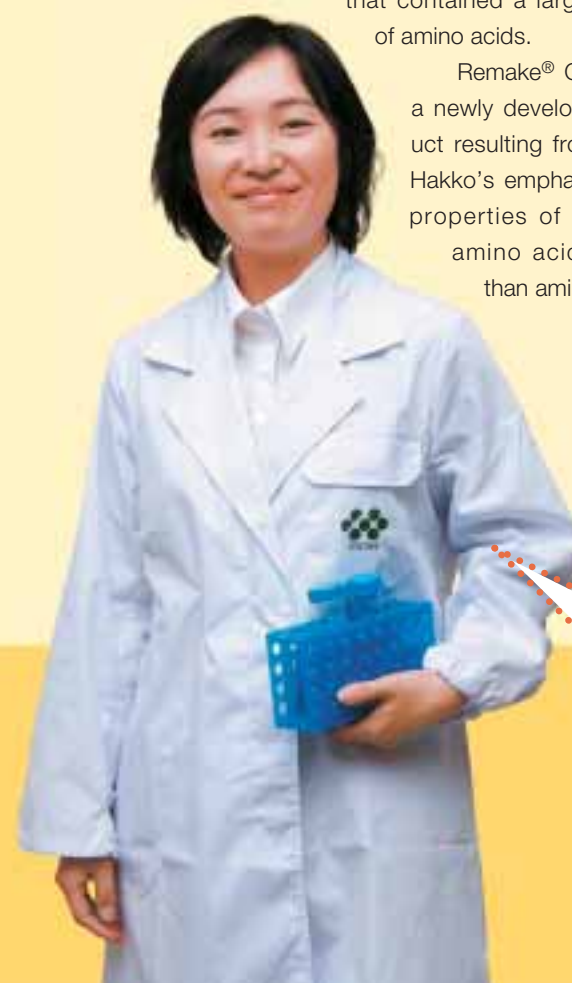


Members of the Healthcare Research Laboratories

## Miho Komatsu

Healthcare Research Laboratories, Bio-Chemicals Business Unit, Kyowa Hakko

There are major differences between the health food markets of Japan and the United States and in the systems that cover these products. We design tests using human and animal subjects, while continually discussing the characteristics of each product that are likely to appeal to our customers. The test results are used in brochures and other materials. Sometimes we have opportunities to talk directly to users, such as when we attend exhibitions. User reactions can be unexpected, and they help to stimulate and motivate us.



## For the Valuable Earth



## Isononanoic Acid and Octanoic Acid lubricant Raw Materials for Ozone-friendly CFC-substitute (HFC) Refrigeration

Specified CFCs (HCFCs, R-22) are still used as the main refrigerants of domestic and commercial air conditioners and industrial freezers. However, research conducted since the late 1980s has shown that these substances damage the ozone layer, triggering health problems that include skin cancer and cataracts. This has led to worldwide efforts to prevent damage to the ozone layer. Several countries, including Japan and the United States, aim to end production of specified CFCs (HCFCs) by 2010. Air conditioners and large-capacity freezers are rapidly being replaced with systems that use ozone-friendly CFC-substitute refrigerants, such as HFC R-407C and R-410A. After 2007, production and sales of CFC-substitute refrigeration equipment and freezers are expected to expand in Asia as well.

Compressor lubricants used in air conditioners, large-capacity freezers and other equipment must be highly compatible with CFC-substitute products. The main ingredients of these lubricants are isononanoic acid and octanoic acid. Kyowa Hakko Chemical is the only company in Asia that manufactures isononanoic acid, which is a synthetic fatty acid. The priority now is to build a global supply system to meet anticipated growth in demand in the United States and Asia. By the first half of fiscal 2005, Kyowa Hakko Chemical plans to increase its isononanoic acid production capacity to over 12,000 tons.

Like isononanoic acid, octanoic acid is manufactured by Kyowa Hakko Chemical using its core competence in the field of oxo synthesis. With production capacity for 30,000 tons, its stand-alone production facility is already the biggest in the world, but Kyowa Hakko Chemical plans to increase capacity still further as required to meet expanding world demand.

**Toshiaki Fujima**  
Intermediates and Specialty Chemicals,  
Kyowa Hakko Chemical

Air conditioners that use CFCs are rapidly being replaced with CFC-substitute products. This is happening not only in Europe, Japan, South Korea and the United States, which have stringent environmental regulations, but also in the rapidly expanding Chinese market. Kyowa Hakko Chemical will continue to contribute to the alleviation of global warming.

**Kenichi Kataoka**  
Intermediates and Specialty Chemicals, Kyowa Hakko Chemical

Diacetone Acrylamide (DAAM) is playing an important role in the shift to water-based coatings. Coating manufacturers around the world recognize the excellent performance of this product, which is being sold in increasing quantities for use in coatings for building exteriors and wood products, especially in the United States and Europe. As an important raw material for coatings developed to reduce emissions of volatile organic compounds (VOCs), DAAM is helping to protect the global environment. We expect demand to expand further.

## Diacetone Acrylamide (DAAM) for Use in Water-based Coatings

Diacetone acrylamide (DAAM) is used in the manufacture of water-based coatings for application on building exteriors and wood products such as kitchen cabinets. Water-based coatings manufactured using DAAM produce significantly less volatile organic compound (VOC) emissions. There is intense interest in these products, which combine consideration for the environment and workers' health with excellent durability in both interior and exterior applications. DAAM, which is incorporated into polymers, can be cured at room temperatures using adipic acid dihydrazide (ADH) as the hardener. In addition to the energy-saving benefits of this product, it also prevents the mate-

rial degradation that can occur when heat is used to harden coatings. Efforts to minimize VOC emissions into the environment are reflected in continual growth in demand for water-based coatings manufactured using DAAM, both in Japan and other countries. Kyowa Hakko Chemical plans to expand its DAAM production capacity as required to meet this growing demand.



## International Assessment of Chemical Product Safety

Kyowa Hakko conducts international product safety assessments in cooperation with the Japan Plasticizer Industry Association (JPIA) and the Japan Chemical Industry Association. International initiatives to assess the safety of chemical substances and make the information publicly available are being led by the Organization for Economic Cooperation and Development (OECD). Under this program, Kyowa Hakko has participated in environmental and health assessment and reporting of High Production Volume (HPV) chemicals as the lead company for two HPV products. One of these reports has been posted on the United Nations Environment Programme (UNEP) website. Kyowa Hakko is also working as a supporting company for 10 products, including three for which assessments have already been completed. It is currently involved in international collaboration on assessments for seven products.

### ■ Safety Assessment of Plasticizers

The Japan Plasticizer Industry Association and plasticizer industry groups in Europe and North America contracted independent research organizations to conduct long-term tests involving the administration of diethylhexyl phthalate (DEHP) to young primates (marmosets). The aim of this program, which covered a two-year period starting in September 2000, was to carry out a comprehensive study of the safety of DEHP and its behavior inside the body, especially its effect on the testes. The findings, which were collated in January 2003, are summarized below. (The results of these tests were presented at the 42nd Annual Meeting of the Society of Toxicology.)

- 1) The testes of primates are not affected by DEHP, unlike those of rodents.
- 2) The behavior of DEHP in the bodies of primates differs significantly from its behavior in rodents. For example, there is no accumulation of the substance in the testes of primates.

Detailed testing of the distribution of DEHP in rodent and marmoset bodies shows that blood concentrations

and transition from mothers to pre-born offspring were lower in marmosets.

Considering the above, the conventional risk assessment based on rodent's testicular toxicity should be reviewed.

DEHP is also one of the substances covered by the Strategic Programs on Environmental Endocrine Disrupters '98 (SPEED98), which are being conducted by the Japanese Ministry of the Environment. In June 2004, the Ministry formally concluded that DEHP had no detectable effect on mammals at the concentrations found in the environment.

In February 2005, the National Institute of Advanced Industrial Science and Technology (AIST), an external research organization affiliated with the Ministry of Economy, Trade and Industry, published a detailed risk report on diethylhexyl phthalate (DEHP). In its report, AIST concluded that there was no cause for concern at current levels of risk. The National Institute of Technology and Evaluation (NITE) has meanwhile published its views on the control of DEHP on its website. Its conclusion was that the present legal framework is adequate, and that additional regulation is not required.

# Measuring Tastes and Aromas

## New Discoveries to Enhance the Experience of Life

The taste of good food is an important ingredient of human happiness and a subject of keen interest to most people. Companies in the food industry aim to please consumers by developing delicious food products. *Kokumi* seasonings and other commercial seasonings manufactured by Kyowa Hakko Food Specialties help to enhance the flavors of many foods. Kyowa Hakko Food Specialties places considerable importance on the factors that make food palatable and is constantly working to increase its understanding through analyses of tastes and aromas.

The perception of tastes and aromas is basically a food-selection mechanism. Sweetness signals that an item can be consumed to provide energy, while bitterness is a signal that an item should be avoided. Yet bitterness is also associated with good taste in some products, such as coffee and beer. To understand what makes foods taste pleasant, we need to clarify the roles played by the signals that tastes and aromas transmit to human beings through dietary culture.

The first step is to transform perceptions of food tastes and aromas into objective data by means of sensory analysis. Since measurements are based on human senses, assessment panelists are carefully trained, and statistical methods are used to compensate for the imprecision of human



Taste sensor

judgments. The foods are then analyzed to investigate the combinations of substances that create each sensory impression. These analyses reveal that aromas and tastes are caused by an amazing range of substances, including volatile constituents, in the case of aromas, and amino acids, sugars and peptides, in the case of flavors. Even more amazing is the capacity of human beings to perceive these substances.

There have been continual advances in the technology used to analyze these substances. Kyowa Hakko Food Specialties is a pioneer in the use of aroma and taste sensors that mimic human sensory systems. It will continue to refine its ability to analyze the role played by seasonings as it works to develop even better products to enhance food flavors.



Aroma sensor

### Takuya Ikeda

Analysis Group, Food Creation Center  
Kyowa Hakko Food Specialties

"Delicious!" What kinds of food do you imagine when you hear this word? Each individual is likely to have a different answer to this question. In fact, this word, which we normally use without much thought, has profound meanings. It expresses the complex interaction between various food ingredients and texture and the experience, physical condition and emotions of human beings. Delicious foods bring joy to people every day. While "deliciousness" may seem to be subjective concept, the focus of our ongoing research is to find ways to express this quality objectively by means of analyzers.

## Community Relations

### Responsible Care (RC) Community Dialog in the Ube-Onoda District (February 2, 2005)

Four chemical companies jointly held their second RC Community Dialog meeting in the Ube-Onoda District. The meeting was attended by a total of 45 people, including representatives of environmental non-governmental organizations, community groups and companies. A new initiative for this meeting was a bus tour of a chemical plant belonging to Ube Industries, Ltd. This was followed by an exchange of opinions, including a lively question and answer session covering topics that included wastewater, odors and environmental reporting. The meeting provided a valuable opportunity to communicate with the local community.



RC Community Dialog meeting

### International Cooperation

#### Exchange of Global Environmental Protection Technology with Shandong Province, China

Kyowa Hakko personnel visited Shandong Province, China in March 2005 as part of a program established by Yamaguchi Prefecture to share technology for protecting the global environment. The visit included a technology exchange with the Environmental Protection Administration of Shandong Province, as well as tours of business facilities and cities. During the technology exchange, Kyowa Hakko representatives presented the Kyowa Hakko Group Sustainability Report and spoke about corporate social responsibility in relation to the environment and other topics.

Participants also met with a Chinese technician who



Interaction with Shandong Province, China

had trained at Kyowa Hakko's Hofu Plant. His determined effort to overcome environmental problems in China was an important reminder of the need for an effective response to global environmental problems.

### Social Contribution Activities

The Nippon Keidanren 1% Club is 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 social contribution activities. Kyowa Hakko participates in 1% Club activities. Kyowa Hakko contributes in a wide range of areas, including science, research, education, social education, the performing arts, culture, the environment, community activities, international exchange and cooperation, social welfare, disaster relief, health and medicine, NPO infrastructure development, archaeology and traditional culture.

#### Kyowa Hakko Social Contribution Activities

Program	Sector
Young Session (lectures by experts)	Education, social education
Science essay competition	
Production and distribution of Braille calendars	
Bio-Adventure Mobile laboratory	
Youth Emotional Development Society	Culture, arts
The Association for International Exchange of Japanese Music	
Go tournament	
Child cancer eradication campaign, etc.	Others

#### Management Guideline and Points Society

##### Management Guideline:

We will strive for management that is open to society and also vigorously adopt thinking based on global standards.

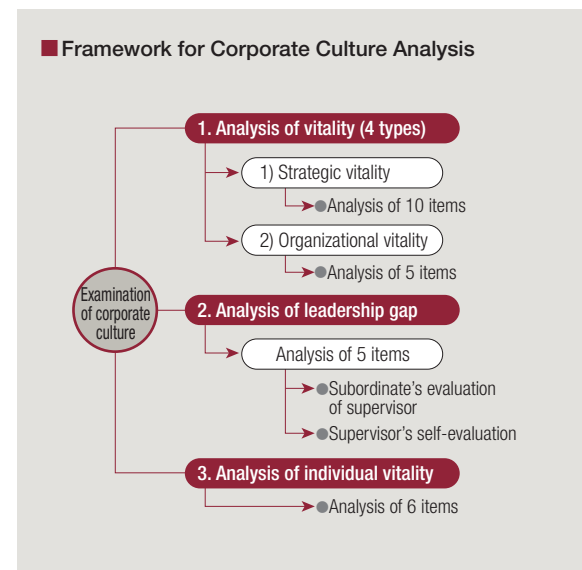
##### Points (Extract):

- We will carry out corporate activities that aim to realize growth that is in harmony with the communities in which we have operations, thus contributing to the development of society and the economy.
- We will work to earn the understanding and trust of local communities through communications, including the exchange of information, and participation in social contribution activities.
- We will carry out social contribution activities that will provide the young people who will lead the next generation with guidance for their lives and dreams to follow.
- We will respect the culture and customs of the regions in which we operate—both inside and outside Japan.
- In the event of a disaster, we will work closely with the local community in aid activities as well as recovery and reconstruction.

# Employee Relations

## Corporate Culture Analysis

Corporate culture has an important bearing on employee motivation and business growth. In fiscal 2002 Kyowa Hakko implemented a questionnaire survey of all employees to determine the level of morale. The results showed that while organizational vitality was high, indicating that Kyowa Hakko has an open and communicative organizational environment, there was a need for improvement in some areas, including strategic vitality based on the sharing of visions and targets, and management leadership. These findings led in fiscal 2003 to “360-degree feedback” from all managers, including executives. Feedback was sought from subordinates, colleagues and supervisors as the basis for the formulation of action plans through workshops in all divisions. Kyowa Hakko has addressed the improvement of corporate culture as a management priority, reflecting issues identified in the survey in education systems and organizational management. Kyowa Hakko will maintain and improve its efforts, taking the results of the fiscal 2005 survey into consideration.



## Employee Training

In parallel with these corporate culture reform initiatives, Kyowa Hakko also devotes considerable effort to human resource development. Employee training is broadly divided into rank-based training, upper management training, organizational culture reform, and support for employee upskilling. There are also numerous programs specific to individual business operations, including busi-

ness upskilling courses. Kyowa Hakko regards human resource development as a key management priority and will continue to enhance and strengthen programs in this area.

There are also educational and training programs designed to raise employees' environmental and safety awareness.

## Labor-Management Communication

Both management and labor recognize the importance of communication as the basis of labor-management relations in Kyowa Hakko, and there is a shared commitment to problem solving through proper consultation. The key forums for labor-management communication are the Management and Union Communication Councils at central and site levels, which are used to discuss issues relating to corporate management and operational policies. The forum for consultation on salaries and working conditions is the Remuneration Committee. Meetings of the Management and Union Communication Councils and Remuneration Committee are convened from time to time to facilitate the resolution of issues that arise in relation to reforms under the current medium-range management plan. Labor and management are working together in the spirit of cooperation to ensure the survival and growth of business operations as the source of employment.



Discussion between labor and management

## Employment of Workers with Disabilities

As of June 2005, people with disabilities made up 1.54% of the Kyowa Hakko workforce. This is below the 1.8% standard set down in the Disabled Persons Employment Promotion Law. Kyowa Hakko aims to reach the standard within two years through increased cooperation with public employment security offices and other organizations.

## Award System

Kyowa Hakko presents a variety of awards, including President's Awards and awards for inventions, in recognition of especially meritorious achievements by employees. Awards are presented to employees who have made outstanding contributions in the areas of environment, safety and quality.



## Active Challenge System

### (Internal Job-posting Program)

Kyowa Hakko operates an internal job-posting system for its in-house companies. Job details are posted on an internal website. The aim of this recruitment method is to match the needs of the workplace with the ambitions and career goals of employees.

## Second Life Support System

Introduced in April 2004, this system is designed to give employees the time they need to set goals and acquire skills for their “second life” by providing up to one year of paid leave.

## Management Guideline and Points Employees

- Management Guideline:**
- We will establish a motivating workplace by promoting the enhancement of individuals' abilities and creativity, as well as emphasizing fair evaluation and treatment of employees.
- Points (Extract):**
- We will nurture a corporate culture that encourages proactive and creative work by providing opportunities for employees to demonstrate these qualities.
  - We will carry out thorough evaluations and award compensation based on work, special skills and performance.
  - We will upgrade training programs and a self-improvement system.
  - We will provide support programs for financial planning.
  - We will ensure a safe and hygienic workplace.
  - We will create a work environment that fosters both mental and physical health.
  - We will create a work environment that enables every employee, including senior citizens, women, people with disabilities and foreigners, to demonstrate their abilities.
  - We will create an environment in which employees can act as members of the community and participate in activities to improve the community.

## Mission & Action for Progress (MAP) System

In April 2005, Kyowa Hakko radically revised its existing skill-development programs and introduced the Mission & Action for Progress (MAP) system. The aim of this approach is to speed up the achievement of operational priorities through repeated plan-do-see (PDS) cycles. Under the MAP system, there are clearly defined work targets and expectations about approaches to work. The results are accurately monitored, and this information is shared between employees and their supervisors. By establishing this new system, Kyowa Hakko aims to accelerate both the achievement of organizational goals and the development of human resources.



## New Amino Acid Plant under Construction in China

**Susumu Shibata, President**  
Shanghai Kyowa Amino Acid Company, Ltd.

Construction has started on our new plant, and buildings have begun to rise out of what was once an area of empty grassland. The opening ceremony was finally held after long delays caused by the late arrival of the equipment. We all felt very emotional as we listened to the thunder of fireworks while the sunset painted the western sky, sharing our prayers for the early and safe completion of the plant.

## Benefits from Information Sharing—Experiences of a Youthful Medical Representative



**Tomoe Yazaki, Medical Representative**  
Tokyo Branch, Kyowa Hakko

I have been a medical representative for three years. My task is to provide medical professionals with information about the appropriate use of our products and to gather information from medical professionals. I am responsible for corporate clinics and medical practitioners in central Tokyo. One of my goals is to persuade major corporate clinics and other institutions to introduce Allelock® and Coniel®. I enjoy working with medical professionals and will continue to do my best to provide them with useful information.



# Safety, Health, Security, Accident Prevention

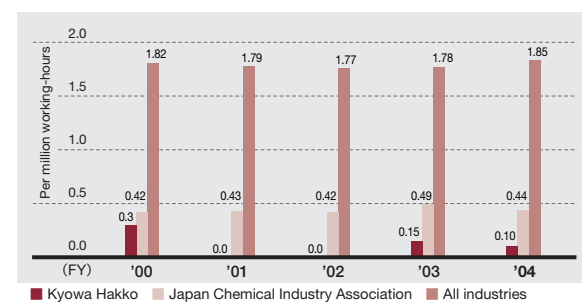
## Occupational Safety and Health

The Environment and Safety policies of the Kyowa Hakko Group (see Page 7) reflect its commitment to the protection of employees, families and the Company. Unions participate in safety and health activities, including environmental and safety assessments for the start-up of new business operations or facility modifications, as well as risk assessments for day-to-day operations.

## Accident Statistics

In fiscal 2004, the occupational injury frequency rate (the number of injuries resulting in lost days per million working hours) for the four main Kyowa Hakko Group companies was 0.10, and the severity rate (lost days per thousand working hours) was 0.0035. Year-on-year changes in the occupational injury frequency rate are shown in the graph. Kyowa Hakko continues to maintain one of the best records in the chemical industry. Kyowa Medex recorded one accident resulting in lost days. This accident occurred when a worker tripped over a stopper on a caster-mounted workbench. This resulted in a fall that caused injury to both of the worker's knees. The workplace environment has since been improved by eliminating workbenches with casters.

■ Trends in Occupational Injury Frequency Rate of Four Main Kyowa Hakko Group Companies



The Kyowa Hakko Group as whole recorded two accidents resulting in lost days. The occupational injury frequency rate was 0.19 and the severity rate was 0.058. Carefully targeted initiatives are being implemented to reduce occupational accidents in affiliated companies, with increased support from business units operating affiliated companies, Kyowa Hakko Chemical, Kyowa Hakko Food Specialties and the Environment and Safety Department.

The Yokkaichi Plant of Kyowa Hakko Chemical has been accident-free for 27 years since 1977 and continues to set new records for accident-free working hours in the organic chemical industry (21.53 million hours as of December 31, 2004). In April 2005, the Fuji Plant reached the Class 3 Safety Record threshold of 14 million hours.

Occupational accidents involving contractors have become an issue in the industry recently. Kyowa Hakko is working to prevent such accidents by strengthening its safety guidance to contractors and clarifying contractors' management responsibilities.

## Awards

The following table lists awards and other actions relating to safety, hygiene and security since 2001.

2001	Fire and Disaster Management Agency commissioner's Award	Head Office
	Award for support of blood donation activities (Minister of Health, Labour and Welfare)	Hofu Plant
2003	Minister of Economy, Trade and Industry award for high-pressure gas safety	Hofu Plant
	Minister of Health, Labour and Welfare safety award to foreman	Hofu Plant
2004	1st class award for safety management of boilers, etc.	Hofu Plant
2005	Certificate awarded by the Japan Industrial Safety and Health Association (JISHA) in recognition of a new accident-free record for the organic chemical industry	Yokkaichi Plant
	Ministry of Health, Labour and Welfare Class 3 Safety Record (14 million accident-free hours)	Fuji Plant

## Mental Health Initiatives

Reports published in recent years indicate that an increasing number of workers are feeling insecure and stressed because of factors that include escalating business competition, job changes resulting from the use of information technology, and the introduction of results-based remuneration systems and employment conditions.

Kyowa Hakko is actively working to optimize the environments for its workers in keeping with its management policies, which emphasize respect for the humanity of individual workers. It has identified mental health as a priority in its medium-term plan and is working with its health insurance association and labor union to implement mental health initiatives and other countermeasures, including education and awareness programs.

## Traffic Safety

The Kyowa Hakko Group has 1,108 vehicles (as of March 2005) for use in sales activities. In accordance with the group traffic safety policy, each site formulates a traffic safety plan and undertakes related activities. In fiscal 2004, there were 84 accidents resulting from negligence, a reduction of 14% from the previous year's total. Upper management at each branch and site are leading concerted efforts to ensure traffic safety.

Kyowa Hakko is also improving the environmental performance of its vehicles. In fiscal 2004, 561 (82%) of its corporate sales fleet of 682 vehicles were low-emission vehicles. Kyowa Hakko aims to increase this to 100% by fiscal 2010.

Fiscal Year	2002	2003	2004
Number of vehicles for sales activities	635	702	682
Number of low-emission vehicles	350	495	561
Percentage of total fleet	55	71	82

## Accident Prevention Assessments

The Kyowa Hakko Group implements safety activities to prevent fires, explosions and leaks of toxic substances. Those activities center on risk assessments. The safety of production processes is assessed using assessment methods based on fire impact evaluations, and evaluations of the potential for leaks or fires involving hazardous substances. Based on the results of these assessments, Kyowa Hakko is further improving its accident prevention facilities.

In fiscal 2004, there were no fires, explosions, chemical leaks or other safety-related incidents.

## Measures for Major Earthquakes

The Kyowa Hakko Group is determined to fulfill its social responsibilities as a manufacturer, particularly its responsibilities as a supplier of pharmaceuticals. Since the second half of the 1970s, when an earthquake was predicted in the Tokai region, it has made preparations that include the establishment of regulations and procedures, the dispersal of production and distribution operations and the earthquake-proofing of buildings.

In recent years, there has been growing concern about the possibility of major earthquakes not only in the Tokai region along the central eastern seaboard of Japan's main island of Honshu, but also along the south-eastern seaboard of Honshu, as well as major earth-

quakes directly under the Tokyo area. Kyowa Hakko has reviewed its earthquake preparedness, including the functions of its head office disaster countermeasures organization, from a risk management perspective.

Earthquake preparedness in homes is also extremely important for the safety of employees and their families. A home safety guide has been distributed to all Kyowa Hakko Group employees in Japan, including temporary and part-time employees, to remind them of the importance of precautionary measures.



Home safety guide

## Distribution Safety

To ensure the safe distribution of chemicals, alcohol and other products, the Kyowa Hakko Group maintains a 24-hour emergency response system. At night or on holidays, callers are connected to the security center, which is part of each plant's environmental and security department. From there, corporate officials can be contacted through the corporate emergency communications network.

Other aspects of the Kyowa Hakko Group's detailed efforts to ensure environmental protection and safety in its distribution operations include the use of the Yellow Card and Container Yellow Card systems advocated by the Japan Chemical Industry Association, and the provision of training for transportation workers. There were no distribution-related accidents during fiscal 2004.

## Emergency Action Guidelines

### Guidelines for Action:

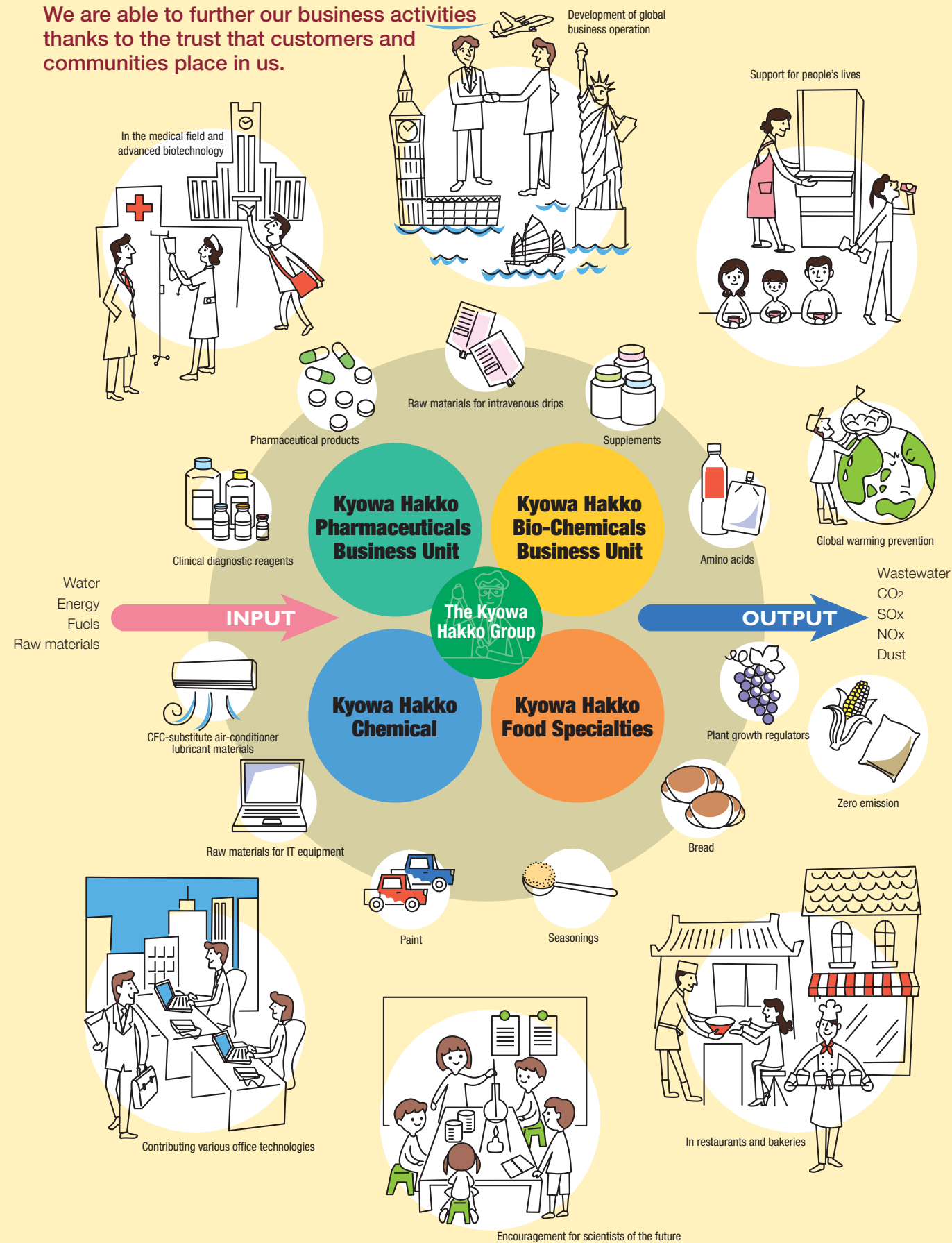
The basic principles for individual action are awareness of one's role as an official member of society and consideration of how one should act in relation to society.

### Points (Extract):

- Consideration for human life and health is the first priority.
- We will strive to minimize impacts on customers, shareholders, suppliers, consumers and communities.
- We will give priority to humanitarian and social contribution, even if this causes a temporary disadvantage to the Company.
- We will take all possible care to protect and conserve the environment.
- We will maintain a high standard of transparency and disclose accurate information as part of corporate governance.

# Global Overview of the Kyowa Hakko Group Business, Social and Environmental Activities

We are able to further our business activities thanks to the trust that customers and communities place in us.



## Protecting Regional and Global Environments

### Environmental Performance



#### The Bio-Adventure Mobile Laboratory Program

Volunteers from the BioFrontier Laboratories participate in a voluntary program to "deliver" science to local elementary and junior high schools, using a specially designed mobile laboratory filled with a variety of experimental equipment.



#### Nature as a Vast Hospital

Kyowa Hakko has been broadcasting environment-related TV commercials since 1991. In January 2005, its commercials were selected for an award presented by the Global Environmental Forum in Japan.

# Action Plans and Performance in Fiscal 2004

Each item of the Kyowa Eco-Index★<sup>1</sup> has shown steady improvement. The Kyowa Eco-Project has brought an average annual improvement of 2.4% in unit energy consumption for the past three years, and total carbon dioxide emissions of the Kyowa Hakko Group were reduced to 90.4% of the fiscal 1990 level. The Kyowa Hakko Group promoted effective utilization of resources, and achieved the zero emission target of final disposal at landfills three years ahead of schedule. By improving technologies and investing in facilities, the Kyowa Hakko Group reduced COD, nitrogen and phosphorous emissions.

Guideline for Action	Initiative	Target	Fiscal 2004 Performance (Status of Progress)	Evaluation <sup>*2</sup>	Medium-Term* Targets	Page		
<b>Guideline for Action 1</b> <See P7> <b>Expand the application of environmental management systems</b>	Establishment of ISO 14001 environmental management system	Four principal companies: Introduction of environmental activities assessment	Introduction of environmental activities assessment	○	Assessment of environmental activities	P12, 13, 14		
		Consolidated subsidiaries: Establishment of ISO 14001 system by fiscal 2004	System under development	○	Qualitative improvement of environment and safety management systems			
		Integration of ISO 14001 and Occupational Safety and Health Management System (OSHMS)	Administration of environment and safety management systems, and establishment of PDCA.	○	Expansion of ISO 14001, OSHMS systems into affiliated companies			
		Audits of consolidated and non-consolidated subsidiaries	Audits of sites of consolidated and non-consolidated subsidiaries (100%) and sites in other countries.	○	Audits of consolidated subsidiaries (100%) in fiscal 2005			
<b>Guideline for Action 2</b> <b>Ensure compliance and continuously improve performance</b>	Ensuring compliance	Zero legal infringements, zero complaints	Zero legal infringements concerning environment and safety Eight complaints (noise: 2, odors: 4, others: 2)	○ ×	Zero legal infringements, zero complaints Secure compliance and establish a management and operation system for handling of waste materials and recycling	P13, 14		
	[Production and R&D]							
	<b>Kyowa Eco-Project (KEP)</b> → P41							
	•Unit energy consumption	Reduction of unit energy consumption by 1% or more per annum	Average reduction of 2.4% per annum over 3 years	—	○	Average reduction in unit energy consumption of 1% or higher	P41, 42	
	•CO <sub>2</sub> emissions	Reduction of CO <sub>2</sub> emissions to fiscal 1990 levels or lower by fiscal 2010	636,000 tons, 9.6% reduction from fiscal 1990 levels	0.95	0.78	○	Achieve fiscal 2010 CO <sub>2</sub> emissions at or below 6% from fiscal 1990 levels	
	•Volume of waste materials	50% reduction in fiscal 2004 from fiscal 1998 levels	127,000 tons, 60% reduction from fiscal 1998 levels	0.65	0.50	○	Implementation of point-of-release measures	
	•Volume of waste disposal at landfill sites	Achievement of zero emissions by 2007, a target of 250 tons	209 tons, 70% reduction from the previous year's levels Achievement of zero emission plan	0.029	0.010	○	New target, 125 tons in fiscal 2007	P45, 46
	•Emissions of adverse air pollutants	97% reduction in fiscal 2004 from fiscal 1996 levels	5.8 tons, 98.6% reduction from fiscal 1996	—	—	○	Reduction of fiscal 2007 chemical substance emissions by 50% from fiscal 2003	P44
	<b>Atmosphere</b>							
	•SO <sub>x</sub> emissions	Below 2,595 tons★ <sup>3</sup>	860 tons, 20% reduction from the previous year's levels	3.0	2.2	○	Below 2,595 tons★ <sup>3</sup> in fiscal 2005 (Fiscal 2007 revision considered)	
	•NO <sub>x</sub> emissions	Below 803 tons★ <sup>3</sup>	549 tons, 10% reduction from the previous year's levels	1.3	1.0	○	Below 755 tons★ <sup>3</sup> in fiscal 2005	
	•Dust emissions	Below 340 tons★ <sup>3</sup>	23 tons, 8% reduction from the previous year's levels	0.58	0.58	○	Below 323 tons★ <sup>3</sup> in fiscal 2005	
	<b>Water</b>							
	•Fresh water usage volume	—	58.5 million tons, 0.2% reduction from the previous year's levels	3.9	3.5	○	Ongoing rationalization of water use	P43
	•COD levels	Below 1,365 tons★ <sup>4</sup>	487 tons, 25% reduction from the previous year's levels	1.8	1.3	○	Below 920 tons★ <sup>4</sup> in fiscal 2005	
	•Nitrogen levels	Below 1,025 tons★ <sup>4</sup>	303 tons, 36% reduction from the previous year's levels	1.5	0.9	○	Below 950 tons★ <sup>4</sup> in fiscal 2005	
	•Phosphorous levels	Below 48 tons★ <sup>4</sup>	18.6 tons, 10% reduction from the previous year's levels	0.80	0.76	○	Below 29 tons★ <sup>4</sup> in fiscal 2005	
	Disasters, accidents	Record no labor/work or environment- or safety-related accidents	Recorded one labor/work accident with absence at four principal companies, one accident recorded at consolidated subsidiaries, and no environment or safety-related accidents			×	No labor/work accidents, no environmental or safety-related accidents	P13, 31, 32
	Distribution environment and safety	Rationalization of distribution, assurance of environmental and safety in distribution	Reduced CO <sub>2</sub> emissions to 2,200 tons from fiscal 2000 levels Low-emission cars accounted for 82% 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	P32, 42
	[Administration]							
Green Office Plan (GOP)	→ P41	Reduction of at least 1% per annum in power consumption Reduction of at least 4% per annum in copy paper use Promotion of green purchasing	2.9% reduction from the previous year's levels 5.8% reduction from the previous year's levels Green purchasing of 67% of copy paper and office supplies	○ ○ ○	1% or higher reduction in electricity use per year 10% reduction in copy paper use from fiscal 2003 levels over 3 years Green purchasing of 70% in fiscal 2007	P41		
<b>Guideline for Action 3</b> <b>Consider the environment throughout the entire product life cycle</b>	LCA/Material balance	Transparency and analysis in material balance at each business	Continuously acquiring LCA data concerning individual products	○	Ongoing business assessments through LCA/material balance assessments	P37, 38		
	Green procurement (GP)	→ P41	Implementation of environmental consideration inquiries at business partner companies	○	Improve environment-related activities with business partners Preferential use of environment-supportive raw materials	P41		
	Packaging materials	Application of Guidelines for Environment-supportive Packaging Materials	Continuously improving packaging materials for pharmaceutical products Development of all-fiber drums for amino acid bulk products at production bases in other countries	○	Promotion of streamlined packaging	P46		
<b>Guideline for Action 4</b> <b>Upgrade environmental and safety assessments</b>	Thorough environmental, safety and product safety assessments	Thorough environmental and safety assessment, risk management	Revision of operating manuals for the Large-scale Disaster Countermeasure Headquarters	○	Thorough risk management, reduction of risk levels Implement activities to promote awareness of comprehensive safety standards for machinery at four principal companies	P17, 32		
<b>Guideline for Action 5</b> <b>Develop new products and technologies</b>	Environment-conscious technology and product development	Realization of development of technologies and products	Consolidation of core technology to accelerate development of bio-processes with lower environmental loads (national project research) Increased the supply of isononanoic acid	○	Development of environmental business outside of Company Analysis of sales of environment-friendly products	P 9, 10, 25, 26		
<b>Guideline for Action 6</b> <b>Provide safe and useful products</b>	Assurance of consumer safety and product user-friendliness	Comprehensive product information and disclosure	Participated in HPV, an international program for acquiring and assessing safety data of chemical products of high production volume Continuation of large-scale clinical trial of drugs targeted toward establishment of evidence-based medicine (EBM)	○	Large-scale clinical trial for EBM Further improvement of product information services	P20, 21, 26		

★<sup>1</sup> An exclusive Kyowa Hakko indicator (Kyowa Eco-Index) that compares unit emissions with Japanese averages based on production values as follows:  
 • CO<sub>2</sub>, Air-pollution, waste index = [Total emissions by the Kyowa Hakko Group / Total emissions in Japan] / [Total production value by the Kyowa Hakko Group / Japan's net domestic product]  
 CO<sub>2</sub> emissions: Carbon dioxide emissions in fiscal 2002 (Environmental Statistics Book 2005, Environmental Policy Bureau, Ministry of the Environment, Japan)  
 SO<sub>x</sub>, NO<sub>x</sub>, dust emissions volume: Emissions in fiscal 2002, based on survey of fixed sources affecting the atmospheric environment (Environmental Statistics Book 2005, Environmental

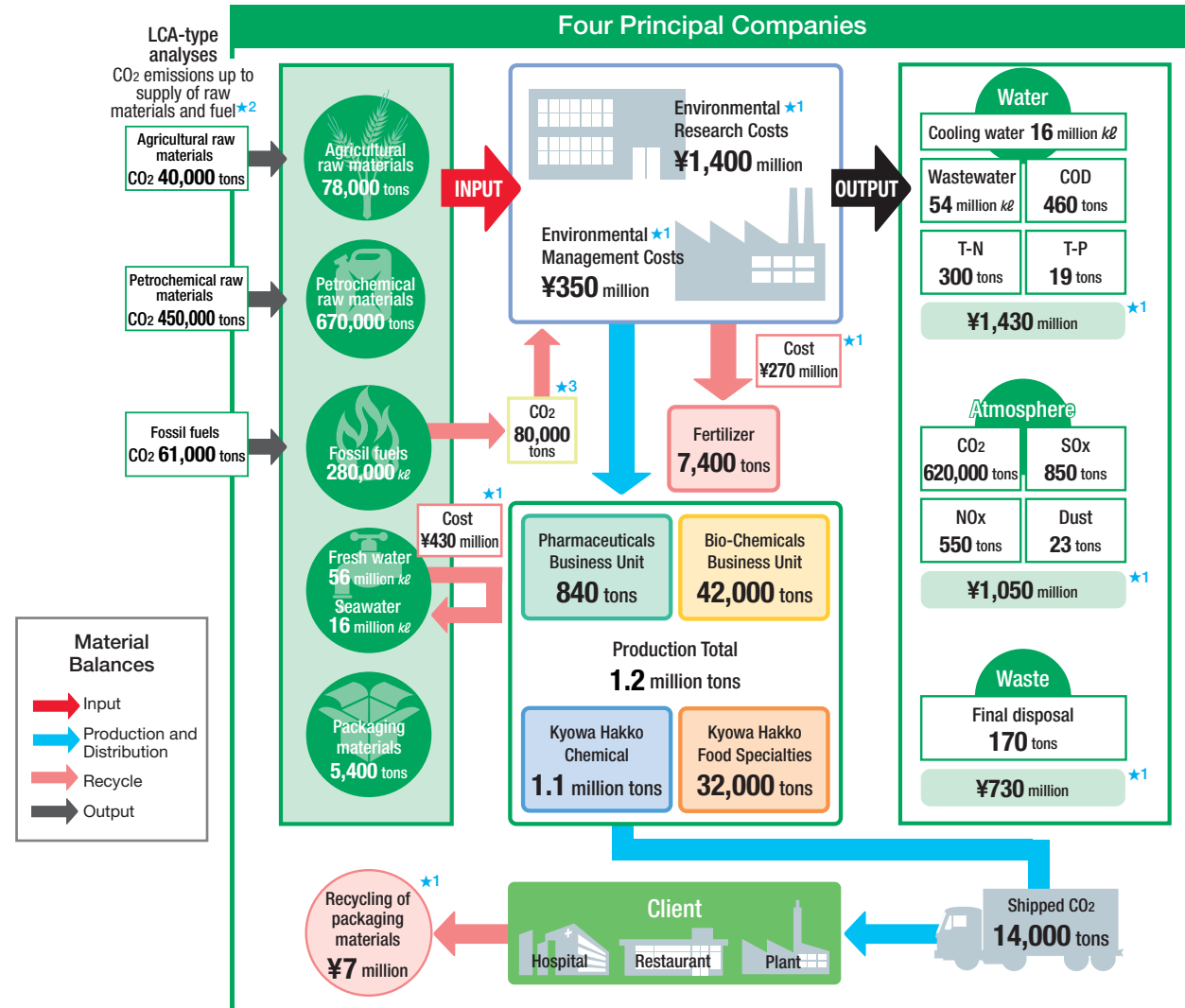
Policy Bureau, Ministry of the Environment, Japan)  
 Waste emissions volume, landfill volume: Industrial waste volume, treatment status in fiscal 2002 (January 21, 2005, report from the Ministry of the Environment)  
 Net domestic product: Statistical data (Economic and Social Research Institute, Cabinet Office, Government of Japan)  
 • Water pollution index = [Total emissions by the Kyowa Hakko Group / Total emissions into closed bodies of water] / [Total production value of the Kyowa Hakko Group / Net domestic product of prefectures surrounding closed bodies of water]

COD, nitrogen, phosphorous: Volume occurring in fiscal 1999 in regions targeted by water regulations (Fiscal 2005 Environmental Statistics Book, edited by the Ministry of the Environment)  
 Net domestic product of prefectures surrounding closed bodies of water: Fiscal 2002 Prefectural Economic Accounts (Economic and Social Research Institute, Cabinet Office, Government of Japan)  
 • Fresh water usage volume index = [the Kyowa Hakko Group's total usage volume/Japan's total usage volume]/[the Kyowa Hakko Group's total production value/Japan's net domestic product]  
 Fresh water usage volume: Fiscal 2001 domestic non-commercial water (14.3 billion tons) +

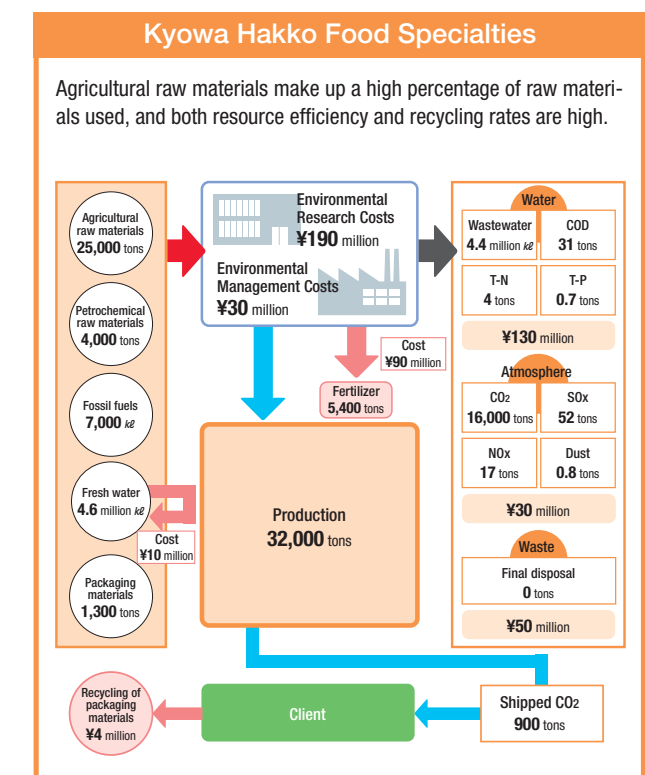
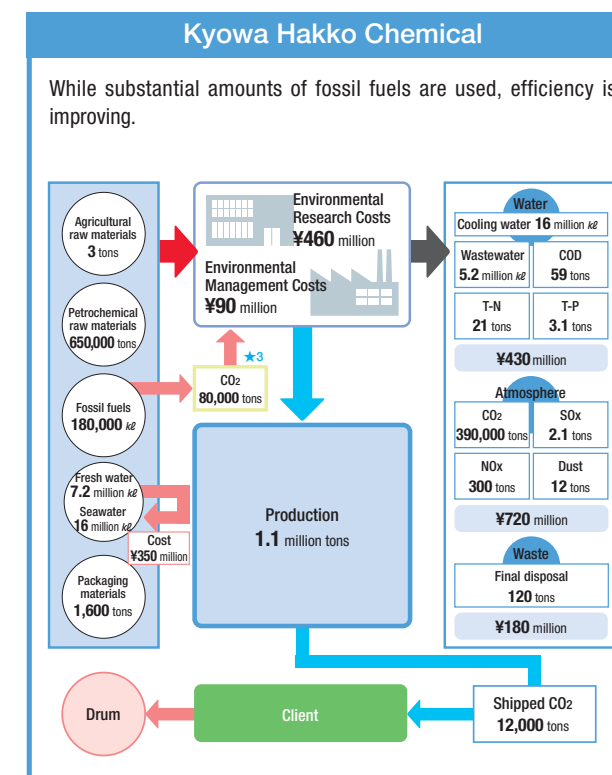
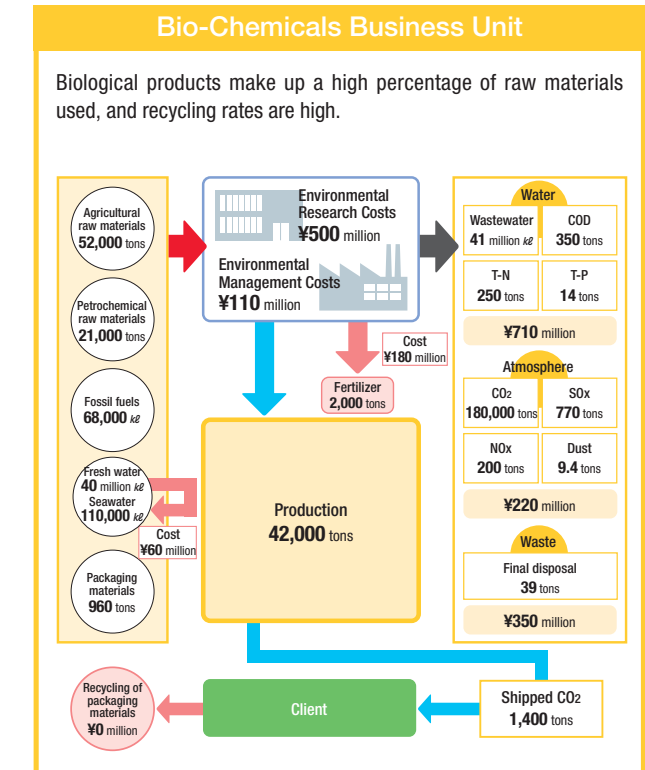
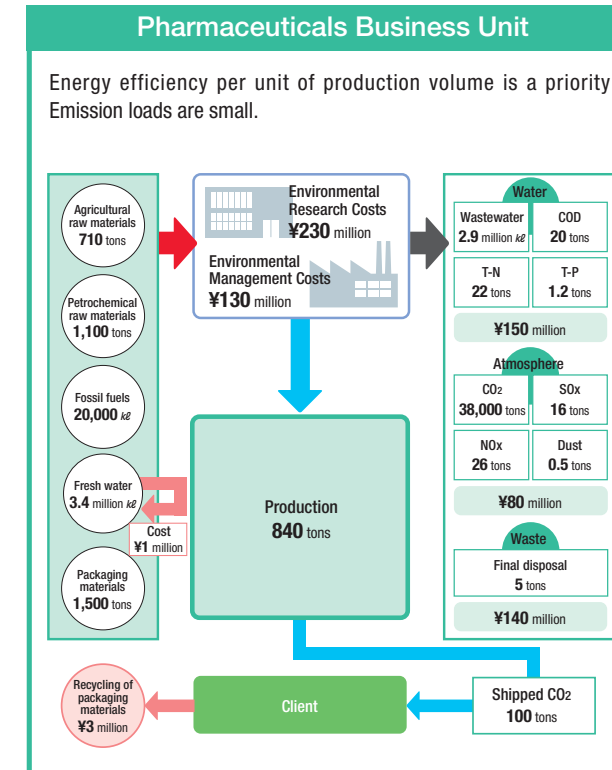
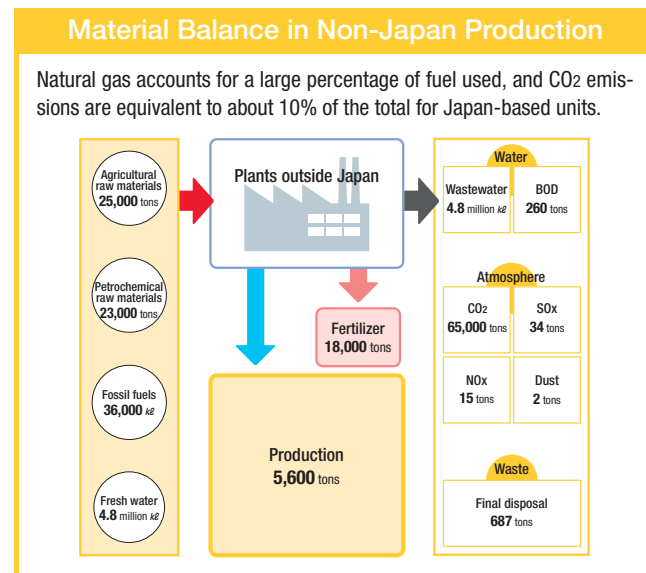
industrial water fresh water replacement volume (11.6 billion tons)  
 (Data: Water Resources Department, Ministry of Land, Infrastructure and Transport)  
 ★<sup>2</sup> Evaluation ○: Achieved target,  
 ○: Improved, but did not achieve target,  
 ×: Target not reached  
 ★<sup>3</sup> The target is 50% of the emission level conforming to the legally mandated concentration.  
 ★<sup>4</sup> The target is 50% below the level agreed-upon with local governments.  
 ★<sup>5</sup> The target is 50% below the site's self-imposed target level.

\*From fiscal 2005 to fiscal 2007

# Material Balance by the Kyowa Hakko Group Business Operations



\*1 The figures shown here were extracted from the environmental accounts.  
 \*2 JLCA-LCA Data Base 2004 (2nd Edition), An Introduction to LCA Administration — Environmental Load of 4,000 Social Stocks, Japan Environmental Management Association for Industry (JEMA) (1998)  
 \*3 The amount of CO<sub>2</sub> fixed in products by means of the oxo process



\*3 The amount of CO<sub>2</sub> fixed in products by means of the oxo process

Resource Efficiency

Year-on-year Evaluation → : ±10%, ○ : 10% or more improvement, × : 10% or more deterioration

		Pharmaceuticals Business Unit	Bio-Chemicals Business Unit	Kyowa Hakko Chemical	Kyowa Hakko Food Specialties	Four Principal Companies
Resource Efficiency *1	tons/¥100 million sales	1.5 ○	290 →	1,000 →	240 →	340 →
	tons/tons of production	2.1 ○	1.8 →	0.57 →	0.90 →	0.62 →
Fuel Efficiency *2	kℓ/¥100 million sales	17 →	260 ×	290 ○	54 →	130 →
	kℓ/tons of production	23 →	1.6 ×	0.16 →	0.21 →	0.23 →
Packaging Materials Efficiency	tons/¥100 million sales	1.0 →	3.7 ×	2.6 ○	10 →	2.3 →
	tons/tons of production	1.4 →	0.023 ×	0.001 →	0.040 →	0.004 →
Fresh Water Resource Efficiency	1,000kℓ/¥100 million sales	2.9 ○	160 ×	11 →	38 ×	25 →
	kℓ/tons of production	4,100 ○	960 ×	6.3 →	140 ×	46 ○

Efficiency rates in the Bio-Chemicals Business Unit deteriorated temporarily because of a shutdown of fertilizer production facilities, and because of changes to the product items.

Unit Emissions

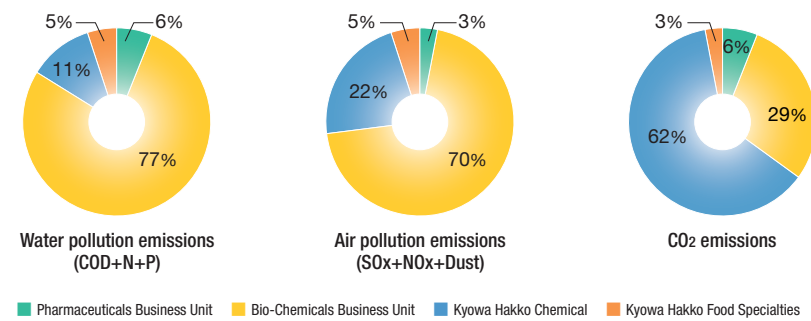
		Pharmaceuticals Business Unit	Bio-Chemicals Business Unit	Kyowa Hakko Chemical	Kyowa Hakko Food Specialties	Four Principal Companies
Unit CO <sub>2</sub> Emissions	tons/¥100 million sales	32 ○	700 ×	620 ○	130 →	280 ○
Unit Final Disposal	tons/¥100 million sales	0.004 ○	0.15 ○	0.20 →	0 ○	0.076 ○
Unit Water Pollution Emissions *3	tons/¥100 million sales	0.04 →	2.4 ○	0.13 ○	0.30 →	0.35 ○
Unit Air Pollution Emissions *4	tons/¥100 million sales	0.04 →	3.8 →	0.49 ○	0.57 ○	0.64 ○

\*1 Index of total usage of agricultural and petrochemical raw materials  
\*2 Index of crude oil conversion to express energy usage in kℓ

\*3 Index of total COD, N and P levels  
\*4 Index of total SO<sub>x</sub>, NO<sub>x</sub> and dust emissions

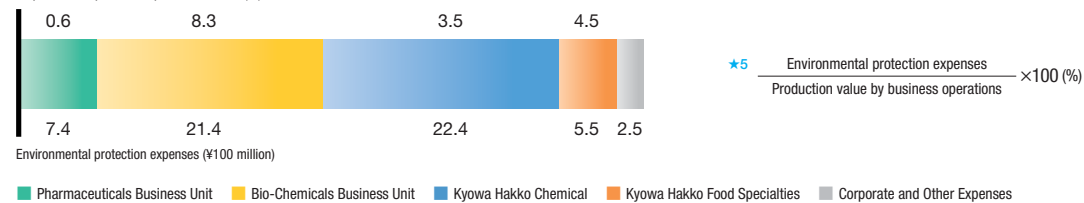
Environmental loads, including CO<sub>2</sub>, final disposal at landfills, water pollution and air pollution have been reduced, and unit emissions have improved.

Emission Load Ratios and Segment Environment Protection Costs



The Bio-Chemicals Business Unit and Kyowa Hakko Chemical account for 74% of total environmental protection costs. Environment-related cost items in the Bio-Chemicals Business Unit include wastewater treatment and by-product recycling required for the production for bulk fermentation products. The large-scale petrochemical production by Kyowa Hakko Chemical results in high energy consumption. In addition to the cost of flue gas treatment measures, including denitration and desulfurization, Kyowa Hakko Chemical pays for recycling of CO<sub>2</sub> through the oxo process. Compared with these activities, the environmental load created by the Pharmaceuticals Business Unit and Kyowa Hakko Food Specialties is minimal, and environmental protection costs are low.

Proportion compared with production value (%) \*5



Environmental Accounting

Overview of Environmental Protection Costs

Investment amounted to approximately ¥700 million. Major items included the improvement of wastewater treatment facilities (¥160 million), and measures to reduce CO<sub>2</sub> emissions, such the improvement of boiler efficiency (¥260 million).

Expenses totaled approximately ¥5,900 million. On-site operating costs amounted to ¥4,000 million, including ¥1,400 million for wastewater treatment, ¥600 million for preventing air pollution and other pollution problems, ¥500 million for global warming prevention measures, and ¥1,500 million for resource recycling.

Overview of Effects

COD, nitrogen and phosphorous emissions were reduced by 25%, 36% and 10%, respectively compared with the previous year's levels. These reductions were achieved through measures that included the improvement and stabilization of wastewater treatment facilities at the Hofu and Yokkaichi Plants, and the introduction of low-emission manufacturing methods. Kyowa Eco-Project initiatives (see Page 41) continued. Unit energy consumption has improved by on average 2.4% annually over three years. Zero emission status was achieved at the corporate level thanks to effective resource utilization.

Classification/Principal Activities (FY2004)	FY2003		FY2004		Focus	FY2004	Comparison with FY2003
	Investment	Expense*1	Investment	Expense*1			
<b>(1) In-Situ Operating Costs</b>	<b>289</b>	<b>4,430</b>	<b>649</b>	<b>3,978</b>			
<b>(1)-1 Pollution Control Costs</b>							
① Water pollution control					• Total volume of wastewater	53.9 million tons	3% increase
[Investment] Installation of COD and nitrogen emission reduction facilities, etc.	134	1,568	181	1,446	• COD levels	487 tons	25% reduction
[Expense] Improvement and operation/maintenance of wastewater treatment facilities					• Nitrogen levels	303 tons	36% reduction
					• Phosphorous levels	18.6 tons	10% reduction
② Air pollution control					• SO <sub>x</sub> emissions	860 tons	20% reduction
[Investment] Renewal of boiler heating units and installation of gas air conditioning facilities	37	521	319	574	• NO <sub>x</sub> emissions	549 tons	10% reduction
[Expense] Operation/maintenance of flue gas desulfurization, denitration, exhaust gas facilities					• Dust emissions	23 tons	8% reduction
Pollution load levy, etc.							
<b>(1)-2 Global Environmental Protection Costs</b>					Unit energy consumption (crude oil conversion)		
[Investment] Maintenance of gas turbine facilities, and conservation of energy	46	495	92	482	• Kyowa Hakko, Kyowa Medex, plus 5 other companies	61.3kℓ/¥100 million of production	11% improvement
[Expense] Purchase and use of CO <sub>2</sub> as raw material for oxo process (Kyowa Hakko Chemical)					• Kyowa Hakko Chemical	161ℓ/ton of production	3% improvement
Maintenance for energy-saving facilities					• CO <sub>2</sub> emissions	636,000 tons	7% reduction
					• CO <sub>2</sub> usage volume (Kyowa Hakko Chemical)	80,000 tons	2% decrease
<b>(1)-3 Resource Recycling Costs</b>					• Fresh water usage volume	58.5 million tons	0.2% reduction
[Investment] Engineering work on waste recycling facilities and water reduction	72	1,846	57	1,476	• Waste materials	127,000 tons	19% reduction
[Expense] Maintenance and management of water conservation facilities and waste recycling and treatment facilities, outside recycling and contracted disposal of waste					• Waste disposal at landfill sites	209 tons	70% reduction
<b>(2) Upstream and Downstream Costs</b>					• The Kyowa Hakko Group continued to promote green purchasing under its Green Office Plan (GOP). The green purchasing ratio (value basis) was 67% (see Page 41).		
[Expense] Promotion of green purchasing of office supplies *2	0	35	1	43			
Refurbishment contract charges under the Packaging Materials Recycling Law							
<b>(3) Environmental Activities Costs</b>					• Operating costs for environmental management systems were approximately ¥170 million. Expenses for greening, beautification, cleaning and other improvements in areas around business sites totaled ¥140 million.		
[Expense] Operation of environmental management systems, measurement of environmental impact, preparation of environmental disclosure documents, environmental improvement, including nature conservation, greening, beautification and scenery preservation at offices and in surrounding areas	23	561	23	495	• A sustainability report was published and distributed to all employees.		
<b>(4) R&amp;D Costs</b>					• There was an increase in research and development costs and other expenditure relating to lubricant raw materials for CFC-substitute refrigerants.		
[Expense] R&D of environment-friendly products	0	1,291	19	1,389	• Kyowa Hakko is conducting basic research concerning green chemistry based on biotechnology.		
R&D aimed at controlling environmental impact at the production stage							
<b>(5) Community Activities Costs *3</b>					• Kyowa Hakko supports the World Wide Fund for Nature Japan and the Nippon Keidanren Nature Conservation Fund. It also participates in the activities of various organizations, including the Japan Chemical Industry Association and the Japan Responsible Care Council.		
[Expense] Membership in and cooperation with environmental protection and nature conservation activities	0	13	0	14			
<b>(6) Environmental Damage Related Costs</b>							
[Expense] Oil pollution liability insurance	0	1	0	1			
<b>Total</b>	<b>312</b>	<b>6,331</b>	<b>692</b>	<b>5,920</b>			

Item/Activities (FY2004)	Amount (¥ million)	
	FY2003	FY2004
<b>Total Investment</b>	<b>8,652</b>	<b>6,697</b>
Enhancement of facilities for food and environment-friendly chemical products production		
<b>Total R&amp;D Costs</b>	<b>29,316</b>	<b>28,790</b>
R&D of new products and technologies		
<b>Sales of Items Related to Resource Recycling as in (1)-3</b>	<b>447</b>	<b>428</b>
Fertilizer containing organic materials, used catalysts		
<b>Effect Related to Saving Resources as in (1)-2 and 3</b>	<b>1,511</b>	<b>1,366</b>
Conservation of energy, water and resources and waste reduction		

Scope of Summary: The production and R&D sites in Japan listed on Page 1 and Kyowa Hakko head office  
 Period Covered: Fiscal 2003 (April 1, 2003–March 31, 2004)  
 Fiscal 2004 (April 1, 2004–March 31, 2005)  
 Calculations were based on suggested environmental accounting standards contained in the Environmental Accounting Guidelines 2005 of Ministry of the Environment.  
 \*1 Expenses include depreciation, personnel costs, utility fees, cost of materials, cost of repairs, outside contracting costs.  
 \*2 Green purchasing statistics represent total purchases of environmentally conscious products, including Eco Mark products.  
 \*3 Environment-related expenses are shown in the environmental accounts. Kyowa Hakko also spent approximately ¥190 million on independent programs in the area of social contribution activities (see Page 28).

# Group-Wide Environmental Protection Activities

## Kyowa Eco-Project (KEP)

### KEP Targets

- CO<sub>2</sub> emissions to below fiscal 1990 level in fiscal 2010
- Yearly reduction of 1% in unit energy consumption
- Achievement of zero emissions by 2007
- 10% reduction in environmental management costs over 3-year period

Kyowa Hakko Group plants and research facilities have been implementing the Kyowa Eco-Project (KEP) since 1998. The main aims of this project are to contribute to the prevention of global warming and achieve zero emission status.

Group officials attending this year's Eco-Project meeting used the meeting as an opportunity to finalize medium-term (three-year) planning. Energy conservation reports presented at the meeting indi-

cated that process enhancements had brought improvements in per unit energy consumption. Participants shared information and views concerning studies on boiler fuel conversion, the benefits achieved by installing gas air-conditioning system, and recycling methods for zero emissions.



## Green Office Plan (GOP)

### GOP Targets for Fiscal 2004

- Reduction of electricity consumption by at least 1% per annum
- Promotion of green purchasing
- Reduction of copy paper use by at least 4% per annum

The Kyowa Hakko Group is striving to reduce energy consumption, especially in its head office, regional offices, branches, plants and research facilities. Under the Green Office Plan (GOP), the Group is also working to reduce copier paper consumption and promote green purchasing.

In fiscal 2004, energy consumption was reduced

by 2.9%, compared with the target reduction of 1%. The target for the reduction of copier paper use was approximately 4%, but usage was actually 5.8% below the previous year's level. The green purchasing ratio, which is the value of environment-supportive products, including Eco-Mark office products expressed as a percentage of total office supplies and copier paper purchased, improved by approximately 10 points to 67%.



Energy conservation activities in the head office

## Environmental Initiatives Relating to Supply Chain/Green Procurement

### Green Procurement (GP) Targets

- Request suppliers to establish ISO management systems
- Thorough enforcement of limits on use of chemical substances

Because the Kyowa Hakko Group relies heavily on suppliers in the area of resource procurement, it is

important to work closely with these companies to protect the environment. Green procurement surveys of suppliers are implemented every two years. In fiscal 2005, the Kyowa Hakko Group revised its policy on the use of chemical substances and plans to apply the new policy to surveys in the second half of the period.

# Global-Warming Prevention Initiatives

### Targets

- To reduce per unit energy consumption to 90% of the fiscal 1990 level by fiscal 2010 (Japan Chemical Industry Association target)
- To reduce the Group's CO<sub>2</sub> emissions to the fiscal 1990 level or lower by fiscal 2010 (Kyowa Eco-Project)
- To reduce per unit energy consumption at the seven principal plants by at least 1% annually (Kyowa Eco-Project target)

### Results for Fiscal 2004

- Per unit energy consumption indexes were kept below target levels, at 78% for Kyowa Hakko and 84% for Kyowa Hakko Chemical.
- The Group's CO<sub>2</sub> emissions totaled 636,000 tons, or 90.4% of the fiscal 1990 level.
- The reduction of per unit energy consumption at the seven principal plants is on target, with a 7.1% reduction achieved over the past three years.

### Medium-term Targets

- To reduce per unit energy consumption to 90% of the fiscal 1990 level by fiscal 2010
- To reduce the Group's CO<sub>2</sub> emissions by 6% compared with the fiscal 1990 level (new target)
- To reduce per unit energy consumption at the seven principal plants by at least 1% annually

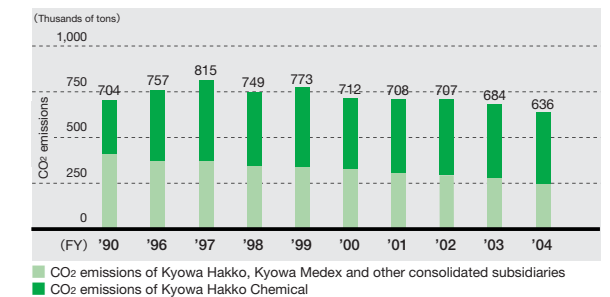
## Reducing Greenhouse Gas Emissions

CO<sub>2</sub> emissions resulting from energy use in plants and research facilities account for large parts of greenhouse gases emitted by the Kyowa Hakko Group. In fiscal 2004, the Group's total CO<sub>2</sub> emissions were reduced by 7% year on year. This reflects changes to the product items, as well as the benefits of energy conservation measures. Total emissions were 636,000 tons, or 90.4% of the fiscal 1990 level. There will be upward pressure on emissions in fiscal 2005 and beyond, in part because of increased production of environment-friendly products. However, every possible effort will be made to meet the new medium-term target through the use of alternative energy resources and further measures to reduce energy consumption.

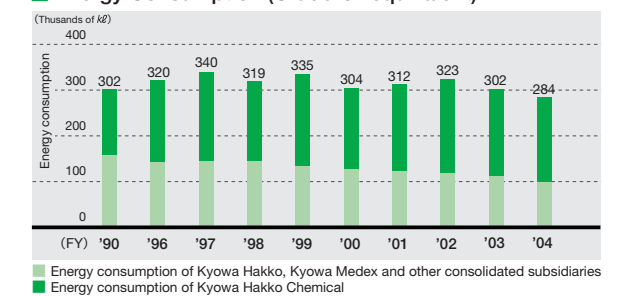
Improvements in per unit energy consumption have exceeded target levels. This reflects progress made

under the Kyowa Eco-Project (KEP), including the improvement of power generation efficiency, the stable operation of gas turbines, the recovery of energy from hot wastewater, and improvements in the efficiency of air-conditioning equipment.

### CO<sub>2</sub> Emissions



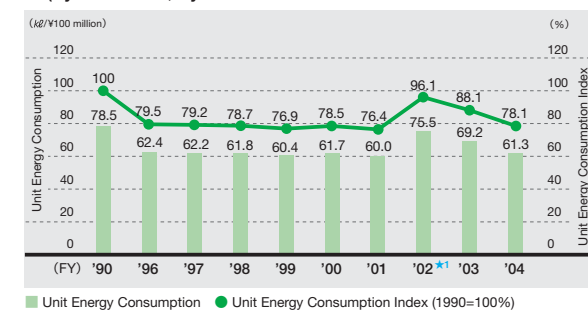
### Energy Consumption (Crude-oil equivalent)



## Preventing Ozone Layer Depletion

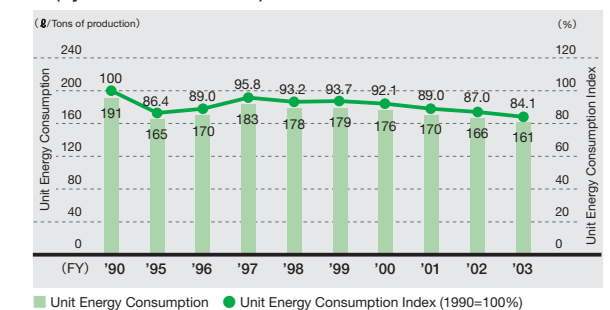
The Kyowa Hakko Group is continually working to prevent CFC leaks by means of day-to-day inspections with detectors. CFC emissions in fiscal 2004 totaled 1.06 tons. As a greenhouse gas, this is equivalent to approximately 3,500 tons of CO<sub>2</sub>. Kyowa Hakko is working to reduce its use of CFCs through the replacement of refrigeration systems.

### Trends in the Per Unit Energy Consumption Index (Kyowa Hakko, Kyowa Medex and other consolidated subsidiaries)



\*1 The deterioration in per-unit consumption in fiscal 2002 resulted from the sale of the liquor business.

### Trends in the Per Unit Energy Consumption Index (Kyowa Hakko Chemical)



Kyowa Hakko aims to reduce per unit energy consumption to 90% of the fiscal 1990 level by fiscal 2010 under the Nippon Keidanren Voluntary Action Plan on the Environment.

# Preventing Air and Water Pollution

# Chemical Substance Reduction

Targets	Results for Fiscal 2004	Medium-term Targets
<b>Atmospheric Emissions*1</b>		<b>Atmospheric Emissions</b>
SOx less than 2,595 tons	SOx 860 tons, 20% reduction	SOx less than 2,595 tons <small>(fiscal 2007 revision in review)</small>
NOx less than 803 tons	NOx 549 tons, 10% reduction	NOx less than 755 tons
Dust less than 340 tons	Dust 23 tons, 8% reduction	Dust less than 323 tons
	COD 487 tons, 25% reduction	
<b>Water Emissions*2</b>		<b>Water Emissions*3</b>
COD less than 1,365 tons	Nitrogen emission 303 tons, 36% reduction	COD less than 920 tons
Nitrogen less than 1,025 tons	Phosphorous emission 18.6 tons, 10% reduction	Nitrogen emission less than 950 tons
Phosphorous less than 48 tons		Phosphorous emission less than 29 tons

★1 The value obtained by applying a value equivalent to 50% of the legally mandated concentration to the total volume  
 ★2 50% of levels determined in consultation with local governments    ★3 50% of the value subject to voluntary management at business sites

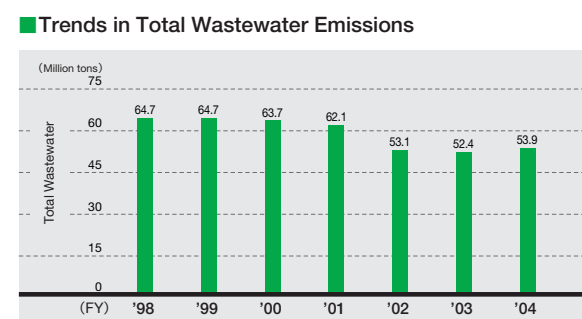
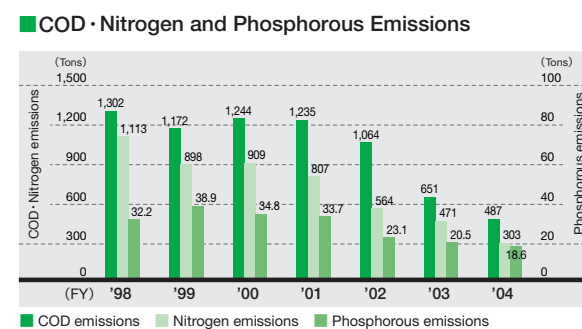
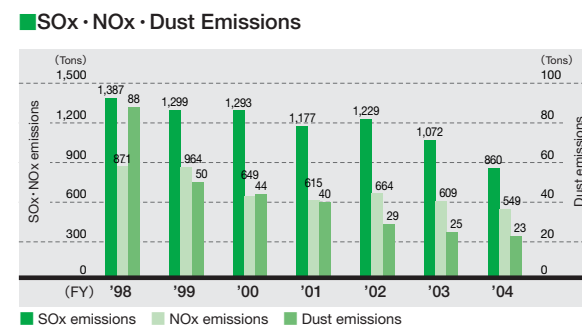
## Reducing Pollutant Emissions

NOx emissions have been steadily reduced through the introduction of a NOx removal facility (in 2000) and the management of boiler operation. A corporate decision was made to reduce SOx emissions through radical measures, including the use of alternate fuels. Plans for implementing these measures will be drawn up in fiscal 2007.

In fiscal 2004, there were reductions in COD, nitrogen and phosphorous emissions. This reflects improvements in wastewater treatment as a result of aggressive investment in research and facilities. Specific improvements at the Hofu, Ube, Yokkaichi and Fuji Plants included facility improvements to stabilize the treatment of waste liquids, and the reduction of environmental loads through the introduction of new manufacturing methods.



Yokkaichi Plant wastewater treatment facility expansion



## Technical Research Laboratories—Technical Support for the Reduction of COD, Nitrogen and Phosphorous Emissions

- Highly efficient air supply and oxygenation systems have been installed at the Hofu, Yokkaichi and Fuji Plants. These are helping to stabilize operations, reduce environmental loads and conserve energy.
- Amino acid refining facilities at the Hofu Plant have been reviewed to increase ammonia recycling. At the Ube Plant, the use of ammonia solution has been reduced.
- Improvements to a methanol rectification tower at the Hofu Plant have allowed the amount of phosphate used to adjust pH to be reduced by 80%.
- Waste liquid from the yeast refining process at the Hofu Plant, which was previously biologically treated, is now concentrated for reuse as a fertilizer.

Targets	Results for Fiscal 2004	Medium-term Targets
<b>Targets</b>		<b>Medium-term Targets</b>
In fiscal 2004, emissions of 12 chemical substances were to be reduced by 97% compared with the level of fiscal 1996.	Emissions of 12 chemical substances amounted to 5.8 tons, a 98.6% reduction compared with the level of fiscal 1996, thereby achieving the goal.	At the end of fiscal 2005, the Kyowa Hakko Group will conduct a detailed survey of emissions of volatile organic compounds (VOC) and make a medium-term plan to reduce those emissions.

## Restriction on Emissions of 12 Chemical Substances

In fiscal 2004, emissions of 12 chemical substances (chemical substances targeted by the chemical industry for priority efforts to reduce emissions) amounted to 5.8 tons, which represents a 40% reduction from the previous year. This results from the improvements in the extraction ratio of chloroform and acetaldehyde. Current emissions are equal to 1.4% of the fiscal 1996 level.

## Reducing Volatile Organic Compound (VOC) Emissions

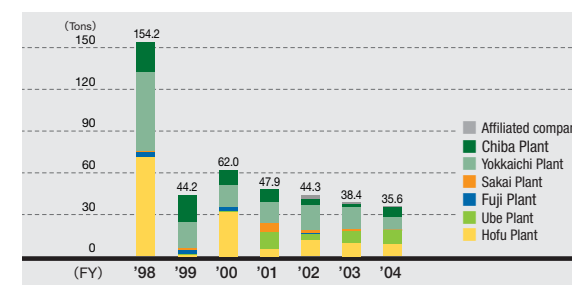
Following changes to Japan's Air Pollution Control Law, businesses are required to undertake initiatives to reduce emissions of VOCs, of which there are over 200 types. During fiscal 2005, the Kyowa Hakko Group will analyze emission locations and levels at its various sites. This initiative was preceded in fiscal 2004 by a detailed study to ascertain methanol emission levels at the Ube Plant and evaluate measures to reduce emissions. This work culminated in a plan to reduce emissions by around 200 tons by means of facility improvements to be implemented in October 2005.

## Curbing Emissions of PRTR Law Class I Chemical Substances

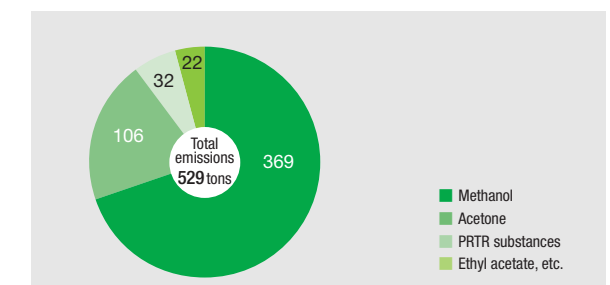
The total amount of Class I substances handled by the Kyowa Hakko Group in fiscal 2004 was approximately 260,000 tons. Emissions into the environment were reduced to 35.6 tons compared with the previous year.

In conjunction with prioritizing the more critical risks, a recovery facility for xylene was installed at Hofu Plant in June 2005.

## Total Emissions of Class I Chemical Substances



## Emissions of Volatile Organic Compounds (Fiscal 2004)



## Managing Soil Pollution Risk

In the past, soil surveys were implemented only when deemed necessary at individual sites. However, surveys are now conducted systematically under corporate regulations adopted in July 2004. To date, no problems have been discovered.

To prevent soil pollution caused by fuel oil leaks, the Kyowa Hakko Group is currently working toward the decommissioning of one of its two remaining underground tanks.



Xylene recovery equipment

# Zero Emission

Targets	Results for Fiscal 2004	Medium-term Targets
To achieve zero emission <sup>★1</sup> status by fiscal 2007.	Final disposal at landfills amounted to 209 tons. Consequently, the zero emission target was achieved three years ahead of schedule.	<ul style="list-style-type: none"> <li>Maintenance of zero emission status in fiscal 2005</li> <li>Reduction of final disposal at landfills by the Kyowa Hakko Group to 125 tons or less at fiscal 2007</li> </ul>

★1 In addition to recycling, the Kyowa Hakko Group must also deal with waste materials that require appropriate disposal through incineration. The Group's zero emission strategy, therefore, calls for the reduction of final disposal at landfills, which involves a high environmental risk, to no more than 0.1% of total waste. The target for fiscal 2007 is to reduce final disposal at landfills to no more than 0.1% of the total in fiscal 2000 (250,000 tons), or 250 tons.

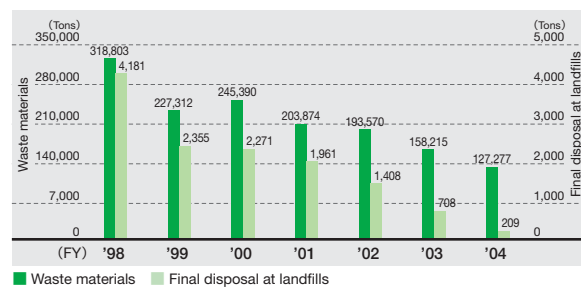
## Achieving Zero Emission Status

The Kyowa Hakko Group in Japan has been working toward zero emission status since 1998, primarily through Eco-Project activities. Kyowa Hakko Group plants and research facilities have implemented a variety of innovative initiatives, including waste sorting and the use of easily recyclable containers. The sharing of information about recycling methods at Kyowa Eco-Project meetings has played a major role in the achievement of zero emission status. Another important topic has been building a circular society by collecting and recycling waste materials.

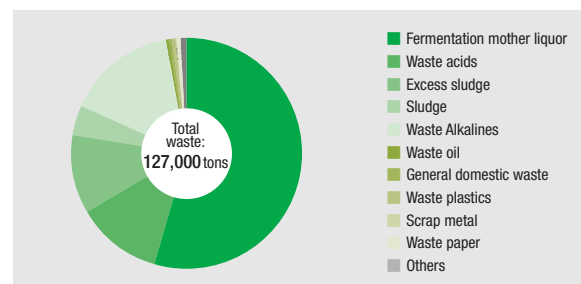
The Environmental Information System, which was introduced in 2002, is well established in Kyowa Hakko Group plants and research facilities. This system allows effective control of information about the products, from the issuance of manifest documents to recovery, and has significantly reduced the work involved in waste disposal.

Landfill sites used for final disposal of industrial waste in Japan have capacity for only 4.5 years. The maintenance of zero emission status has become an important mission for businesses.

## Trends in Waste Materials and Final Disposal at Landfills



## Waste Materials by Type of Substance



## Zero Emission Activities at the Ube Plant

In fiscal 2002, final disposal at landfills by the Ube Plant amounted to 797 tons, or 57% of the total for the Kyowa Hakko Group. Ash from the incineration of excess biological process sludge made up 98% of final disposal at landfills. Since then, monthly environmental project meetings have been held to share information within the plant and monitor progress toward the achievement of zero emission status by fiscal 2007. The following initiatives have brought the Ube Plant closer to this goal.

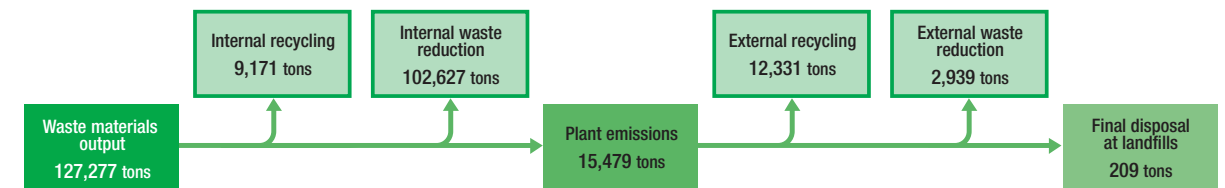


Environmental Project Coordinator:  
**Masatoshi Okazaki**

- Liquid waste from plant:** Reduction of surplus sludge volumes through reduction of nitrogen load
- Biological processing:** Reduction of surplus sludge volumes through optimization of operating conditions
- Dehydrated sludge:** Establishment and expansion of relationships with recycling companies
- Incinerator ash:** Selection of recycling companies and expansion of relationships

Initial negotiations with recycling companies were difficult because of disagreement over terms of acceptance and other matters. However, Kyowa Hakko's strong commitment to the achievement of zero emission status eventually resulted in success. In fiscal 2004, final disposal at landfills was reduced to 8 tons, confirming that the Ube Plant had reached zero emission status.

## Overall flow of waste recycling and disposal (FY2004)



## Environment-Friendly Packaging Materials

As part of zero emission activities at its plants, Kyowa Hakko has led the industry in eliminating outer packaging from its pharmaceutical production lines. It took this step in fiscal 2001. While the environmental load from pharmaceutical production processes is not especially high compared with bulk pharmaceutical materials manufacturing processes, Kyowa Hakko has continued to emphasize consideration for the environment in its packaging designs for end products.

## Recent Improvements

Polypropylene trays	Replaced with paper trays or eliminated
Metal caps (polypropylene)	Replaced with caps made from same material as package
Surface coatings (solvent-based)	Replaced with water-based coatings
Cans	Replaced with paper cartons

All-fiber drums have been introduced in packaging for bulk products, such as amino acids. Systems for recycling these drums as paper resources are being deployed at production sites in Japan and outside Japan. Distribution centers for the pharmaceutical segment are also working to reduce waste by reusing empty boxes.

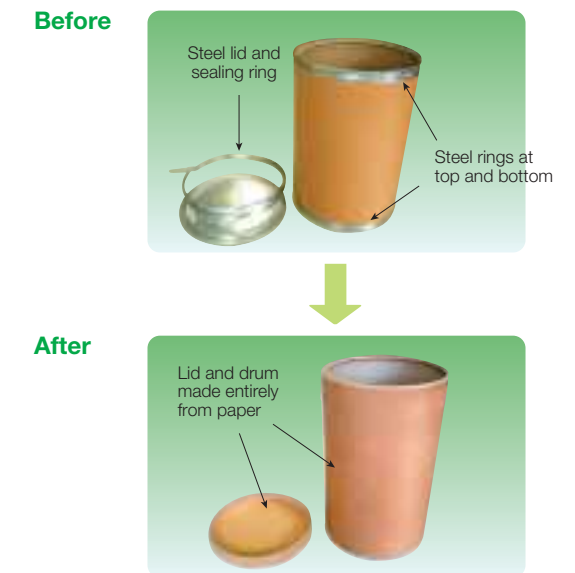
## Disposal of Recovered Pharmaceuticals

Recovered pharmaceuticals are strictly controlled and disposed of through incineration under the supervision of Kyowa Hakko officials.



Recovered pharmaceutical products are carefully monitored as they are fed into an incinerator.

## Improvement in packaging recycling



## Dioxin-Related Measures

All seven incinerators are stringently controlled using both hardware and software systems. Dioxin emission concentrations are in accordance with the Law Concerning Special Measures against Dioxins. The Kyowa Hakko Group is taking steps to reduce incineration volumes, including stricter sorting of waste.

## Measures Concerning Polychlorinated Biphenyls (PCBs)

In the past the Kyowa Hakko Group used transformers, condensers, stabilizers and other items containing PCBs. In accordance with the PCB Special Measures Law, these items have been placed in secure storage facilities designed to prevent seepage into the ground.


Condensers and transformers	77
Lighting stabilizers	2,883
Insulation oil, etc., containing PCB	520 liters

These items will be appropriately disposed of after regional treatment programs established by Japan Environmental Safety Corporation become operational.



# Site Data

### Hofu Plant




**Location** 1-1, Kyowa-machi, Hofu City, Yamaguchi Prefecture  
**Telephone** 0835-22-2511  
**Site area** 694,000m<sup>2</sup>  
**Main activities** Pharmaceuticals, foodstuffs, biochemicals, alcohol  
**ISO 14001 accreditation date** July 26, 1999

Initiative	Fiscal 2003		Fiscal 2004	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ*/¥100 million of production)	215	238	111%	
SOx emissions (tons/year)	996	790	79%	
NOx emissions (tons/year)	265	209	79%	
Dust emissions (tons/year)	11	9	82%	
Wastewater volume (million tons/year)	21	19	93%	
COD levels (tons/year)	325	220	68%	
Nitrogen levels (tons/year)	304	165	54%	
Phosphorous levels (tons/year)	6	4	67%	
Volume of waste materials*1 (tons/year)	104,254	80,405	77%	
Volume of waste disposal at landfill sites (tons/year)	51	31	61%	

\*crude-oil equivalent

### Ube Plant




**Location** 2548, Fujimagari, Ube City, Yamaguchi Prefecture  
**Telephone** 0836-22-5500  
**Site area** 580,000m<sup>2</sup>  
**Main activities** Pharmaceuticals, biochemicals  
**ISO 14001 accreditation date** September 11, 2000

Initiative	Fiscal 2003		Fiscal 2004	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ*/¥100 million of production)	64	52	82%	
SOx emissions (tons/year)	67	47	70%	
NOx emissions (tons/year)	15	12	81%	
Dust emissions (tons/year)	0.8	1.2	150%	
Wastewater volume (million tons/year)	23	26	111%	
COD levels (tons/year)	177	166	94%	
Nitrogen levels (tons/year)	141	109	77%	
Phosphorous levels (tons/year)	11	11	100%	
Volume of waste materials*1 (tons/year)	7,420	6,409	87%	
Volume of waste disposal at landfill sites (tons/year)	434	8	2%	

\*crude-oil equivalent

### Fuji Plant




**Location** 1188, Shimotogari, Nagaizumi-cho, Sunto-gun, Shizuoka Prefecture  
**Telephone** 055-986-7600  
**Site area** 65,000m<sup>2</sup>  
**Main activities** Pharmaceuticals  
**ISO 14001 accreditation date** May 29, 2000

Initiative	Fiscal 2003		Fiscal 2004	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ*/m <sup>2</sup> -floor area)	0.17	0.17	100%	
SOx emissions (tons/year)	5	5	100%	
NOx emissions (tons/year)	12	13	108%	
Dust emissions (tons/year)	0.1	0.1	100%	
Wastewater volume (million tons/year)	2.5	2.7	108%	
COD levels (tons/year)	2.3	9.9	430%	
Nitrogen levels (tons/year)	4.6	5.3	115%	
Phosphorous levels (tons/year)	0.4	0.3	75%	
Volume of waste materials*1 (tons/year)	665	631	95%	
Volume of waste disposal at landfill sites (tons/year)	0	0	—	

\*crude-oil equivalent

### Sakai Plant




**Location** 1-1-53, Takasu-cho, Sakai City, Osaka Prefecture  
**Telephone** 072-223-5554  
**Site area** 21,000m<sup>2</sup>  
**Main activities** Pharmaceuticals  
**ISO 14001 accreditation date** November 27, 2000

Initiative	Fiscal 2003		Fiscal 2004	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ*/¥100 million of production)	49	20	41%	
SOx emissions (tons/year)	0	0	—	
NOx emissions (tons/year)	0.4	0.5	125%	
Dust emissions (tons/year)	0	0	—	
Wastewater volume (million tons/year)	0.09	0.07	82%	
COD levels (tons/year)	5	1	20%	
Nitrogen levels (tons/year)	3	0.3	10%	
Phosphorous levels (tons/year)	0.1	0.1	100%	
Volume of waste materials*1 (tons/year)	544	436	80%	
Volume of waste disposal at landfill sites (tons/year)	8	5	63%	

\*crude-oil equivalent

★1 Amounts calculated on the assumption that biologically treated sludge has an 85% water content

### Tsuchiura Plant, Kyowa Hakko Food Specialties, Co., Ltd. Including Tsuchiura (Healthcare) of Kyowa Hakko




**Location** 4041, Ami, Ami-machi, Inashiki-gun, Ibaraki Prefecture  
**Telephone** 029-888-8001  
**Site area** 178,000m<sup>2</sup>  
**Main activities** Foodstuffs  
**ISO 14001 accreditation date** March 21, 2000

Initiative	Fiscal 2003		Fiscal 2004	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ*/¥100 million of production)	33	32	97%	
SOx emissions (tons/year)	0.5	0.4	80%	
NOx emissions (tons/year)	3.3	3.3	100%	
Dust emissions (tons/year)	0.3	0.2	67%	
Wastewater volume (million tons/year)	0.6	0.6	100%	
COD levels (tons/year)	2.2	3.4	155%	
Nitrogen levels (tons/year)	0.9	1.2	133%	
Phosphorous levels (tons/year)	0.1	0.2	200%	
Volume of waste materials*1 (tons/year)	489	792	162%	
Volume of waste disposal at landfill sites (tons/year)	0	0	—	

\*crude-oil equivalent

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




**Location** 11-1, Goiminamikaigan, Ichihara City, Chiba Prefecture  
**Telephone** 0436-23-9111  
**Site area** 215,000m<sup>2</sup>  
**Main activities** Chemicals  
**ISO 14001 accreditation date** November 27, 2000

Initiative	Fiscal 2003		Fiscal 2004	
	Performance	Performance	Comparison	
Unit energy consumption (ℓ*/Ton of production)	166	164	99%	
SOx emissions (tons/year)	0.3	0.2	67%	
NOx emissions (tons/year)	36	38	105%	
Dust emissions (tons/year)	1.9	1.7	89%	
Wastewater volume (million tons/year)	2.0	1.9	95%	
COD levels (tons/year)	21	17	81%	
Nitrogen levels (tons/year)	12	11	88%	
Phosphorous levels (tons/year)	0.8	1.1	138%	
Volume of waste materials*1 (tons/year)	980	1,022	104%	
Volume of waste disposal at landfill sites (tons/year)	38	26	68%	

\*crude-oil equivalent

### Yokkaichi Plant, Kyowa Hakko Chemical Co., Ltd. Including Yokkaichi (Pharmaceuticals) of Kyowa Hakko




**Location** 2-3, Daikyo-cho, Yokkaichi City, Mie Prefecture  
**Telephone** 0593-31-0624  
**Site area** 323,000m<sup>2</sup>  
**Main activities** Chemicals, pharmaceuticals  
**ISO 14001 accreditation date** July 23, 2000

Initiative	Fiscal 2003		Fiscal 2004	
	Performance	Performance	Comparison	
Unit energy consumption (ℓ*/Ton of production)	166	161	97%	
SOx emissions (tons/year)	2	2	100%	
NOx emissions (tons/year)	267	261	98%	
Dust emissions (tons/year)	10	11	110%	
Wastewater volume (million tons/year)	3.0	3.3	110%	
COD levels (tons/year)	107	42	39%	
Nitrogen levels (tons/year)	5	10	200%	
Phosphorous levels (tons/year)	2	2	100%	
Volume of waste materials*1 (tons/year)	42,519	36,108	85%	
Volume of waste disposal at landfill sites (tons/year)	83	98	118%	

\*crude-oil equivalent

### Fuji Plant, Kyowa Medex Co., Ltd.



**Location** 600-1, Minamiishiki, Nagaizumi-cho, Sunto-gun, Shizuoka Prefecture  
**Telephone** 055-988-6000  
**Site area** 24,000m<sup>2</sup>  
**Main activities** Diagnostic reagents, medical equipment, contract analysis  
**ISO 14001 accreditation date** November 26, 2001

Initiative	Fiscal 2003		Fiscal 2004	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ*/¥100 million of production)	13.3	19.2	144%	
SOx emissions (tons/year)	1	1	100%	
NOx emissions (tons/year)	7.6	9.9	130%	
Dust emissions (tons/year)	0.2	0.2	100%	
Wastewater volume (million tons/year)	0.17	0.11	65%	
COD levels (tons/year)	0.04	0.06	150%	
Nitrogen levels (tons/year)	—	—	—	
Phosphorous levels (tons/year)	—	—	—	
Volume of waste materials*1 (tons/year)	56	74	132%	
Volume of waste disposal at landfill sites (tons/year)	7	0	0%	

\*crude-oil equivalent

# Consolidated Financial Data

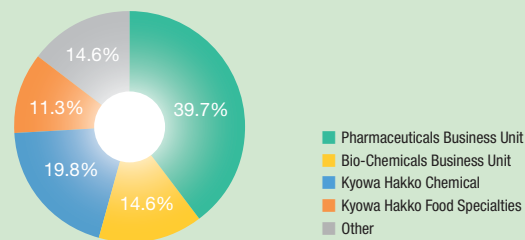
Business conditions remained challenging in the year ended March 31, 2005. The Kyowa Hakko Group worked dynamically to improve earnings by expanding sales and reducing costs. It also focused on product

development and business restructuring. These efforts were reflected in net sales of ¥358.9 billion and an operating income of ¥33.5 billion, representing year-on-year increases of 2.9% and 24.9% respectively.

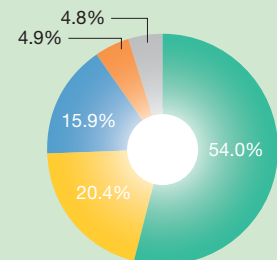
(FY)	2004	2003	2002*3	2001	2000	2004
	Millions of Yen					Thousands of U.S. Dollars*1
<b>For the Year:</b>						
Net sales	¥358,963	¥348,838	¥359,285	¥378,668	¥375,610	\$3,342,611
Operating income	33,507	26,836	16,089	20,357	17,712	312,012
Net income	17,932	10,017	8,485	5,535	9,395	166,980
Capital expenditures	7,647	9,041	11,791	11,454	17,092	71,208
Depreciation and amortization	10,565	11,358	14,768	17,819	18,502	98,380
R&D expenses	28,762	29,206	31,438	29,294	28,921	267,825
<b>At Year-End:</b>						
Total assets	374,493	361,096	368,772	430,113	431,410	3,487,224
Interest-bearing debt	12,193	13,358	51,969	74,354	87,624	113,540
Total shareholders' equity	235,439	225,042	219,047	211,652	194,692	2,192,374
Employees	5,960	6,294	6,749	7,299	7,766	
	Yen					U.S. Dollars*1
<b>Per Share Data:</b>						
Net income*2	¥ 41.7	¥ 23.0	¥ 19.4	¥ 12.7	¥21.6	\$0.388
Total shareholders' equity	556.3	522.6	505.4	487.5	448.3	5.180
Cash dividends	10.0	7.5	7.5	7.5	7.5	0.093
	%					
<b>Ratios:</b>						
Return on assets	4.88	2.74	2.12	1.28	2.17	
Return on equity	7.79	4.51	3.94	2.72	4.82	

\*1 U.S. dollar amounts are translated from Japanese yen, for convenience only, at the rate of ¥107.39=US\$1, the approximate exchange rate at March 31, 2005.  
 \*2 Net income per share of common stock is based upon the weighted average number of shares of common stock outstanding during each year, appropriately adjusted for subsequent free distributions of common stock.  
 \*3 Liquor operations were transferred to Asahi Breweries, Ltd. in September 2002.

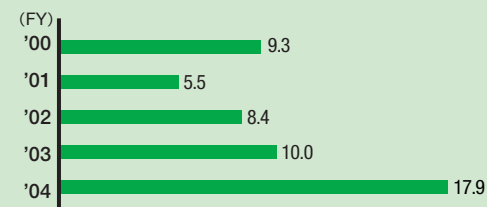
■ Net Sales Composition by Business Operations



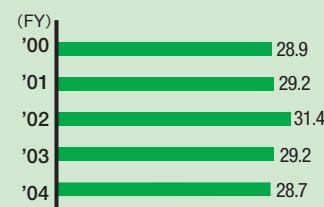
■ Operating Income Composition by Business Operations



■ Net Income (Billions of Yen)



■ R&D Expenses (Billions of Yen)



# Third-Party Assessment (Viewpoint)

## The Meaning of "Advanced" in Relation to Environmental Initiatives

The Kyoto Protocol took effect on February 16, 2005. Will it be effective? The circumstances of countries vary widely. Some are advanced, others impoverished. CO<sub>2</sub>, which plays a major role in warming, is emitted through the combustion of fossil fuels. Advanced countries are countries that achieved development in the period up to the 1970s, when petroleum, the most convenient of the fossil fuels, was still available at negligible prices. An increase in per-capita energy consumption is absolutely essential for the many countries that are poised to achieve economic development in the years ahead. So the reduction of CO<sub>2</sub> emissions is really the responsibility of the advanced countries.

This sharing of roles among the advanced countries and developing countries is the aim of the Kyoto Protocol. The Protocol establishes the principle that truly advanced countries should reduce their CO<sub>2</sub> emissions. Any country that withdraws from the framework is thus abandoning its claim to be advanced. Countries that are starting to achieve rapid economic development, such as China and India, will be invited to join the framework. Gradually, even the most impoverished countries will also be asked to participate.

The overall strategy from a global perspective is to allow global carbon dioxide emissions to increase until around 2040-50, and to reduce them rapidly thereafter. The aim is to hold the projected temperature increase by 2100 at around 2°C.

Similar circumstances surround the publication of environmental reports and sustainability reports. Japanese companies are not legally required to publish these reports, but the ability to publish accurate reports indicates that the company concerned is advanced, in terms of sustainability, and is fulfilling its social responsibility by showing other companies how an advanced company should behave. In one sense, the publication of a quality report is a challenge on which a company stakes its claim to be advanced.

I have previously said that for a company to be considered friendly to the environment it must be half-a-step ahead of the rest of society. However, to be half-a-step ahead in these times of rapid change, it is actually necessary to anticipate developments two or three steps ahead.

Emeritus Professor University of Tokyo  
 Former Head of the Center for Collaborative Research, University of Tokyo

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.



Dr. Itaru Yasui, Vice-Rector  
 United Nations University

<http://www.yasuienv.net>

The public appears to have become aware of the phrase "corporate social responsibility," or CSR, in recent times. However, debate on this subject is flawed because of the mistaken assumption that compliance with legal obligations is the basic component of CSR. I believe that CSR is really about the direction in which companies lead society.

As I read Kyowa Hakko's current "Sustainability Report," I sense that Kyowa Hakko is becoming aware that sustainability on a global scale is the ultimate goal for all human activity, and that it has started to take up the challenge of applying this direction to its business activities. In particular, the idea that companies are "allowed to exist" by society expresses the company's relationship with society. In my opinion, a company's sustainability is defined by the extent to which it feels a sense of responsibility toward people and products. In this sense, these words can be seen as an expression of a commitment to work in cooperation with society, which is made up of people.

Conventional environmental management consists of reduction initiatives targeting paper, waste and electric power. Kyowa Hakko set itself the goal of maintaining its CO<sub>2</sub> emissions at the 1990 level, and it attained this goal by 2004. This achievement can be seen as evidence of a proactive approach to the establishment of a business structure that is highly compatible with the global environment.

Finally, this third-party assessment is not intended as an endorsement of the accuracy of the report's content, or affirmation that Kyowa Hakko's corporate activities are appropriate. It simply expresses my view that those activities are in keeping with the activities of a company that is leading society in line with my concept of "human sustainability on the planet."

# Stakeholder Meeting

Building the Sustainable Society



## <What is Kyowa Hakko?>

**Mizukami:** Kyowa Hakko has contributed to the health and well-being of people since its establishment in 1949. Our founding principle is that when in doubt about our future course, we should choose the path that will allow us to bring the greatest benefit to society.

**Tatsumi:** I see Kyowa Hakko as a company that has maintained a clear awareness of its own mission and role, based on this founding spirit, and worked steadily to implement these values. It is significant that you have maintained this commitment down to the present day.

**Murakami:** I think it would be wonderful if all Kyowa Hakko employees share the history of Kyowa Hakko and the aims of its founder and act on the basis of those values. That is

because employees feel proud when their company is contributing to society. I hope that your employees will also tell people about the new possibilities of your final products and ways in which they contribute to society.

**Ueda:** We often see the Kyowa Hakko logo on food products, but fewer people are aware of the efforts made by Kyowa Hakko to improve lives by realizing the potential of biotechnology and science. Companies need to inform the public fully about their values and visions for the future.

**Tsunoda:** I am interested in Kyowa Hakko as a Japanese company that was able to express the unique *umami* flavor in seasonings. I am also interested in the personality and philosophy of its founder, who was

inspired to produce fermented seasonings through his involvement in the processing of molasses in Indonesia. I was impressed that this initiative not only helped to improve the food situation in Japan, but also contributed to the alleviation of an environmental problem in a developing country.

## <Fostering Understanding and Appreciation of Science>

**Ochiai:** Employees at the BioFrontier Laboratories participate in a voluntary program to foster interest in science among children.

**Murakami:** Children are tending to turn away from science because they have few experiences that inspire their interest and curiosity. It is important to create that initial situation that sparks the desire to learn more.

**Ueda:** In the field of pharmaceuticals, for example, products go through rigorous checking before they go on sale, so their safety is assured to some extent before they reach the market. However, no criteria have been established for the evaluation of health foods. What criteria can consumers use when deciding whether to choose health foods and supplements developed



Moderator:  
**Minoru Nagashima,**  
ex-General Manager  
Safety and Environment  
Management Dept.  
Corporate Compliance Division  
Kyowa Hakko Kogyo



**Keiko Ochiai,**  
Associate Director  
Research Planning Department  
BioFrontier Laboratories  
Kyowa Hakko Kogyo



**Toru Mizukami,**  
General Manager  
Safety and Environment  
Management Dept.  
Corporate Compliance Division  
Kyowa Hakko Kogyo



**Kenshiro Honda,**  
Manager  
Corporate Communications Dept.  
Kyowa Hakko Kogyo



**Ms. Kimie Tsunoda**  
Steering Committee of the  
Valdez Society



**Mr. Akifumi Ueda**  
Representative  
Citizens' Science Initiative Japan



**Ms. Kikuko Tatsumi**  
Board Member, Chairperson  
Environmental Committee  
Nippon Association of  
Consumer Specialists



**Ms. Chisato Murakami**  
Secretary General,  
Japan Council on the UN Decade  
of Education for Sustainable  
Development

by Kyowa Hakko? Consumers must be able to accept the necessity, safety and scientific reliability of the products that they buy. It is important to provide information in ways that properly meet this need.

## <On Improving the Report>

**Tsunoda:** When setting and assessing environmental targets, it is necessary to explain the criteria. For example, are the targets appropriate for the industry? Are they challenging targets? What is important here is Kyowa Hakko's performance in a global context. We can perceive a company's efforts more clearly when we are shown its overall environmental and social impact. Another key aspect is the vision. If the vision is clearly defined, we can better understand the positioning of the report's content in relation to that vision.

**Ueda:** The detailed statistics in the data section are important for experts who are deeply interested in environmental matters. However, they do not present a clear picture for the general reader. You need sections targeted toward environmental experts, and sections written in ways that convey information directly to general readers. When the targets are clearly stated, the Company's stance also becomes apparent.

**Murakami:** Readers can learn much by focusing on industry-level prob-

lems and initiatives. From the Company's perspective, this is a good opportunity to inform the public about the efforts made.

**Tatsumi:** I am very impressed that you have divided your environmental performance information into business operations and clearly specified the environmental loads in each area. My impression is that you have clearly shown the characteristics of its business operations and presented the information to us in ways that are easy to understand.

It would be even better if you could present your long-term vision and explain the steps needed to realize that vision.

**Tsunoda:** I suggest you should also include information about targets that you have failed to meet. When you describe efforts to achieve reduction targets, you should also state why reductions occurred. Was it the result of efforts made, or were alternative substances found? The same reduction may be viewed differently if we know about the background.

## <The Meaning of Sustainability>

**Honda:** Kyowa Hakko has always placed great importance on consideration for the environment. I am sure that we will also apply the concept of sustainability to our social initiatives.

**Tatsumi:** I think that corporate social responsibility, contribution to society

and environmental initiatives begin with efforts to raise the awareness of employees. When employees have strong awareness, their behavior outside of the company will be guided by the same attitudes. I hope that this type of awareness will spread throughout society.

**Tsunoda:** The concept of "sustainability" does not seem to exist in the Japanese language. Initiatives that help to broaden debate with external stakeholders like ours are essential in terms of understanding what kinds of information need to be provided in order to express in Japanese what the world needs.

**Ueda:** The question that we need to ask is whether your present activities can continue for a hundred years, or even a thousand years. Kyowa Hakko develops new products and works to gain broad acceptance for them. You can say that your activities are sustainable if you would be able to continue in the same direction for a hundred years. Rather than just focusing on short-term added value, you need sustained efforts that go beyond the short-term view.

**Nagashima:** We will work to ensure that the activities of Kyowa Hakko have a beneficial impact on society by continuing to focus on sustainable activities based on our founding values, and by disclosing information appropriately.

## Third-Party Ratings

### Environmental Management

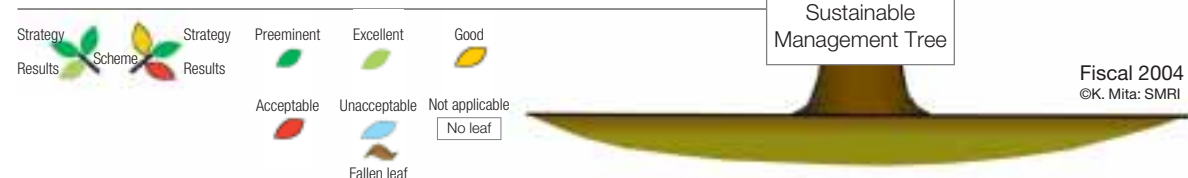
#### Commitment Survey

(Japanese newspaper, Nihon Keizai Shinbun, December 6, 2004)

Kyowa Hakko ranked 99th out of 590 companies. Its rankings in the past eight surveys have ranged within the top 100, making it one of the leading companies.

### Sustainable Management Rating Institute (SMRI)

The diagram shows the results of Kyowa Hakko's fiscal 2004 Sustainable Management Ratings, which was conducted by the Sustainable Management Ratings Institute. Issues identified through this process are being used as feedback for the improvement of activities as part of the Kyowa Hakko Group's continuing efforts to earn the confidence of society.



## Reader Opinions and Impressions

### Results from the Reader Survey Attached to Last Year's Report and Responses from the Kyowa Hakko Group

- Q.** The inclusion of comments by outsiders in the form of third-party assessment is a good idea. You should include more comments by people within and outside the Kyowa Hakko Group.
- A.** For the fiscal 2005 edition, we held a stakeholder meeting with the assistance of non-profit organizations. We have done our best to reflect the views expressed at the meeting in this report.
- Q.** The language used in your report is difficult to understand in places, perhaps because of the need to be precise. Would it be possible to present the results more clearly by using newspaper-style articles?
- A.** Some of the information tends to be difficult to absorb, especially in the environmental performance sections. We have introduced various improvements, including the listing of targets, results and medium-term targets at the top of each page. We will continue to target further improvements in readability.
- Q.** There should be more detailed information about worker health and safety management
- A.** In the area of worker safety, we have conducted group-level assessments focusing on machinery, processes and organizations. As far as worker health is concerned, we have made improvements in such areas as mental health and health assessments. The fiscal 2005 report contains more information about these matters.

## Third-Party Verification

Sustainability Report 2005  
Third-Party Verification—Written Opinion  
(Translation from Japanese)

July 4, 2005

Dr. Yuzuru Matsuda  
President and Chief Executive Officer  
Kyowa Hakko Kogyo Co., Ltd.

*Akio Yamamoto*  
Akio Yamamoto  
Chairman, Verification Advisory Committee

*Yasuo Tanaka*  
Yasuo Tanaka  
Chief Director, Responsible Care Verification Center

**Objectives of Verification**  
This Responsible Care Report Verification refers to "Sustainability Report 2005," which was prepared by Kyowa Hakko Kogyo Co., Ltd. It expresses our opinion, as chemical industry specialists, concerning the following matters.

1. The reasonableness of the methods used to calculate and aggregate performance indicators (numerical values), and the accuracy of numerical values.
2. Consistency between information in the report and evidential documents and materials.
3. Evaluation of Responsible Care activities.
4. Characteristics of the report.

**Verification Procedures**

- At the corporate level. The consistency of the report with the evidence was checked, and the methods used to aggregate and compile performance indicators reported from each site (office, plant) were confirmed by interviewing those responsible for operations and the compilation of data, and by seeking documents and requesting explanations of those documents.
- At the site level. The consistency of the report with the evidence was checked, and the methods used to aggregate and compile performance indicators reported to the head office by each site (office, plant) were confirmed by interviewing those responsible for operations and the compilation of data, and by seeking documents and requesting explanations of those documents. The site selected was the Ube Plant.
- Performance indicators 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 values.
  - Performance indicators were calculated and aggregated reasonably by the head office and the Ube Plant.
  - The performance statistics were accurate across the scope of the survey.
  - There was a difference of opinion about the method used to calculate NOx emissions, but the difference in the figures was negligible, and the issue will be considered for future reference.
- 2) Consistency between information in the report and evidential documents and materials.
  - It was confirmed that information shown in the report was consistent with the evidential documents and materials that were examined. There were issues with the appropriateness of expressions or ease of understanding at the draft stage, but these have been corrected in the present report, and there are now no specific aspects that require further documentation.
- 3) Evaluation of Responsible Care (RC) activities
  - We recognize that significant benefits have been achieved through efforts in a number of areas, including the reduction of energy consumption, the reduction of waste materials emissions (achievement of zero emission status), and the reduction of atmospheric emissions of substances covered by the PRTR Law.
  - We also recognize that high standards have been achieved in such areas as the management of wastewater treatment facilities at the Ube Plant and the effectiveness of treatment.
- 4) Characteristics of the report
  - We were impressed by Kyowa Hakko's efforts to seek the views of concerned groups through a stakeholder meeting. We hope that these views will be used to produce even better reports.
  - We were also impressed by the decision to distribute this report to all employees.



**A scanning electron microscope image of the filamentous fungus *Aspergillus japonicus***

*Aspergillus japonicus* is related to *Aspergillus oryzae*, which is used in the clarification of fruit juices and wine and the production of various fermented foodstuffs. It produces useful enzymes for use in various products, such as diagnostic reagents for health checks.

Photograph:

**Keiko Ochiai, Ph.D.**

Associate Director

Research Planning Department, Kyowa Hakko BioFrontier Laboratories

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