



KYOWA BIO-INNOVATOR

This identity expresses the determination of the Kyowa Hakko Group to maximize its corporate value through the creation of new value and growth in its four business areas: pharmaceuticals, biochemicals, chemicals and food—all of which center on innovative application of life sciences and biotechnology. “Kyowa Bio-Innovator” also symbolizes the Group’s vision as an R&D-based enterprise capable of significantly enhancing well-being and living standards in the 21st century.

Sustainable Focus

Highlights of Sustainability Activities by the Kyowa Hakko Group

- 1. Medical care centered on patients**
Kyowa Hakko conducts large-scale clinical trials to identify the drug usage methods best suited to patients. [➔ P23](#)
- 2. Medical Information Center**
This facility provides wide public access to information from medical professionals and other sources in forms that are easy to use. [➔ P22](#)
- 3. Healthcare Business**
Kyowa Hakko has integrated its business units for products and materials that help to maintain good health. [➔ P16-17](#)
- 4. Kokumi Seasonings**
Kyowa Hakko has created *kokumi* seasonings that resonate with food ingredients to enhance the taste experience. [➔ P18](#)
- 5. Isononanoic Acid**
This product is an essential ingredient for non-CFC freezer lubricants. [➔ P19](#)
- 6. DAAM**
Diacetone acrylamide (DAAM) is used in the production of waterborne coatings that do not release volatile organic compounds into the environment. [➔ P19](#)
- 7. Accident-free Operation**
The Yokkaichi Plant of Kyowa Hakko Chemical continues to set a new industry record for accident-free hours worked. [➔ P32](#)
- 8. Zero Emissions**
Kyowa Hakko has halved final disposal at landfills from the previous year’s level and is making significant progress toward its zero emission goal. [➔ P42](#)
- 9. Reducing Water Pollution**
Wastewater discharges have been dramatically reduced through increased liquid waste recycling and the improvement of technology for wastewater treatment facilities. [➔ P41](#)

Kyowa Hakko Group's

Interaction with consumers, communities and the environment

Sustainability Universe



Amino acids

Amino acids, taken in either tablet or drink form, can help to maintain health

OUT

CO₂
SO_x
NO_x
Dust

Pharmaceuticals Comp

Bio-Chemicals Compa

IN
Water

Zero-emission initiatives

Fermentation

Fertilizer

Products

Medical field

Helping to improve the quality of life (QOL) through the continuing development of new technology and new pharmaceuticals, and through activities of medical representatives

Diagnostic reagents

Used to check conditions and protect the health through early diagnosis

Healthcare (Health foods)

A moderate diet, exercise and quality supplements—the keys to day-to-day health maintenance

Advanced biotechnology

Joint research leading to new discoveries and new products

Seasonings

For noodle soups and *oden* stews with flavor intensity to please even the professional palate

Food Company

Kyowa Hakko Chemical

Paint and ink raw materials

Supporting progress in industries ranging from automobile manufacturing to housing construction

Global warming prevention initiatives

IN
Energy
Fuel
Raw materials

KYOWA BIO-INNOVATOR

Wastewater
OUT





CONTENTS

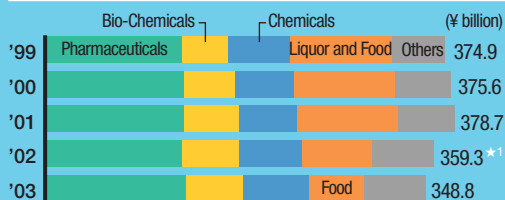
- 1** Highlights
- 4** The Kyowa Hakko Group's Business Activities
- 6** Foreword
- 8** Action Plans and Performance in Fiscal 2003
- 10** Environment and Safety Management Systems
- 12** Environmental, Safety and Product Safety Assessments
- 13** **New Products and Technologies to Help Society and the Environment**
 - 14** ● New Drugs with Real Value
 - 16** ● Delicious Ways to Enjoy the Benefits of Amino Acids
 - 18** ● *Kokumi*—the Subtle Key to Deeper Flavors
 - 19** ● Protecting the Earth
 - 20** Environmental Activities, Environment-Related Research and Development
- 21** **Social Performance**
 - 22** Contributing to Society through the Pharmaceutical Business
 - 26** Customer Relationships
 - 27** Quality Assurance—Putting the Customer First
 - 28** Working with Communities and Promoting Science
 - 30** Employee Relations
 - 32** Preserving Safety and Health
- 33** **Environmental Performance**
 - 34** Group-Wide Environmental Protection Activities
 - 35** Material Balances by Individual Kyowa Hakko Business Operations
 - 38** Environmental Accounting
 - 40** Global Warming Prevention Initiatives
 - 41** Preventing Air and Water Pollution
 - 42** Working toward Zero Emissions
 - 44** Environmental Characteristics of Overseas Production Operations
 - 45** Environmental and Safety Assessments of Overseas Affiliated Companies
 - 46** Environmental and Safety Risk Management
 - 50** Site Data
- 52** **Financial Performance**
- 53** **Third-Party Assessment**
- 55** Third-Party Review

The Kyowa Hakko Group's Business Activities

Corporate Name Kyowa Hakko Kogyo Co., Ltd.
Established July 1, 1949
Paid-in Capital ¥26,745 million (at March 31, 2004)
Representatives Chairman: Dr. Tadashi Hirata
 President: Dr. Yuzuru Matsuda
Home City 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, including alcohol for use in liquor production
- Manufacture and sale of solvents, 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

Plants/Kyowa Hakko*2

Tsuchiura
 Fuji
 Sakai
 Yokkaichi (Pharmaceuticals)
 Hofu
 Ube

Head Office and Sales Bases

Sapporo
 Tohoku
 Tokyo
 Nagoya
 Osaka
 Chugoku
 Shikoku
 Kyushu

Pharmaceutical Representative Offices

57 Nationwide

Principal Consolidated Production Bases*2

Kyowa Hakko Chemical Co., Ltd. (Chiba)
 Kyowa Hakko Chemical Co., Ltd. (Yokkaichi)
 Kyowa Medex Co., Ltd. (Fuji)

Other Consolidated Production Bases

Ohland Foods Co., Ltd. (Chiba)
 Ohland Foods Co., Ltd. (Tsuchiura)
 Riken Kagaku Co., Ltd. (Itabashi)
 Asahi Foods Products Co., Ltd. (Shizuoka)
 Kyowa F. D. Foods Co., Ltd. (Hofu)
 Kyowa Hifoods Co., Ltd. (Ube)

Research Laboratories of Three Principal Companies*2

Pharmaceutical Research Center (Fuji)
 Medicinal Chemistry Research Laboratories
 Pharmacokinetic Research Laboratories
 Drug Formulation Research Laboratories
 Toxicological Research Laboratories (Fuji, Ube)
 Tokyo Research Laboratories (Pharmaceuticals)
 Sakai Research Laboratories
 BioFrontier Laboratories (Machida)
 Healthcare Research Laboratories (Tsukuba)
 Tokyo Research Laboratories (Bio-Chemicals)
 Technical Research Laboratories (Hofu)
 Aquaculture Research Laboratories (Ube)
 Food Creation Center (Tsuchiura)
 Kyowa Hakko Chemical Co., Ltd. Yokkaichi Research Laboratories
 Kyowa Medex Co., Ltd. Research Laboratories

*2 Pertaining to the three principal companies—
 Kyowa Hakko, Kyowa Hakko Chemical and
 Kyowa Medex

OVERSEAS BASES

Overseas Production Bases

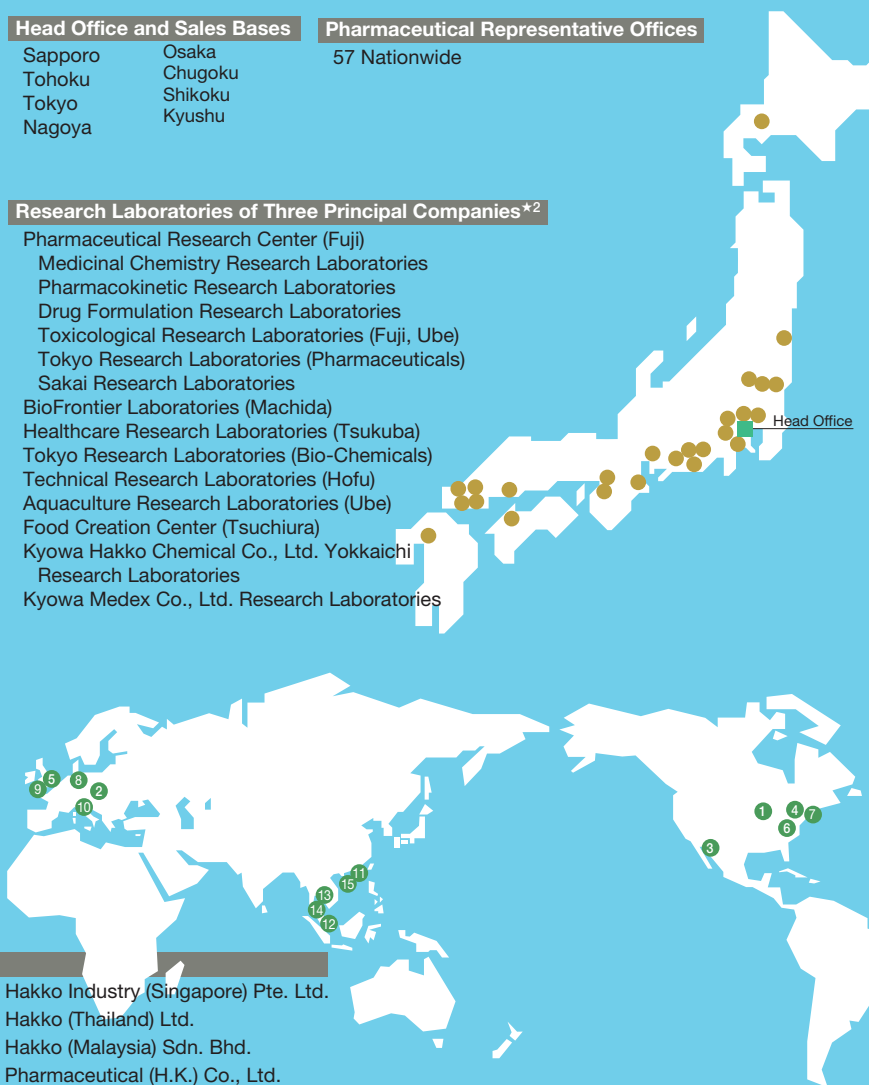
- Biokyowa Inc.
- Agroferm Hungarian-Japanese Fermentation Industry Ltd. (AGROFERM)
- Select Supplements, Inc. (SSI)

Overseas R&D Bases

- Kyowa Pharmaceutical, Inc.
- Kyowa Hakko U.K. Ltd.
- BioWa Inc.

Principal Overseas 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.



Areas and Period Covered by Report

The information contained in this report covers production, research and sales sites in Japan, the three overseas production companies, and overseas sales and research sites. The scope of data gathering in relation to environmental loads and other factors is as follows.

(1) Production and research bases in Japan:

Production sites, Tokyo Research Laboratories, Healthcare Research Laboratories
 Statistics for research facilities at production site are included in the statistics for each production site.

(2) Yokkaichi Plant (Pharmaceuticals)

Emission load statistics are included in the statistics for the Yokkaichi Plant of Kyowa Hakko Chemical Co., Ltd.

(3) Three Overseas Production Bases

Statistics for these operations are shown separately in this report because of the need to maintain consistency with previous reports, and because of the way emissions are attributed.

(4) Domestic Sales Offices

The statistics do not include energy consumption in sales offices, which amounts to less than 1% of the total for production and research bases. Figures for these sites are instead shown separately in the "Green Office Plan."

This report was produced according to the Environmental Reporting Guideline of the Ministry of the Environment and Responsible Care codes. It is also

based on the Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI).

Japanese statistics in this report cover fiscal 2003 (April 2003–March 2004). Overseas statistics refer to calendar 2003 (January–December 2003), though certain information, such as the results of initiatives, is partially made up of data for 2004.

Consolidation Changes that Influence the Areas and Period Covered by Report

This report includes data for Agroferm Hungarian-Japanese Fermentation Industry Ltd., all shares of which were transferred to the German company Degussa AG on June 30, 2004.

KYOWA BIO-INNOVATOR

New pharmaceutical products for a new century

PHARMACEUTICALS

The in-house Pharmaceuticals Company aims to contribute to the health of people throughout the world by supplying pharmaceutical products in a wide range of fields, including anticancer agents, antiallergic agents, and antihypertensive agents. The Company has linked its pharmaceuticals business operations in Japan, North America and Europe to create innovative new agents that enhance the effectiveness of treatments and help to improve the quality of life for patients. The Pharmaceuticals Company also contributes to early detection and diagnosis of disease by developing and selling clinical diagnostic reagents.

➡ P14, P22-26, P35

Meeting new challenges with biotechnology

BIO-CHEMICALS

The in-house Bio-Chemicals Company uses biotechnology to manufacture and sell a variety of high-quality materials for use in pharmaceuticals, amino acid drinks, cosmetics and many other items. In the healthcare field, the Bio-Chemicals Company sells a range of health food products based on development capabilities in both the pharmaceuticals and food areas. In addition, the Company manufactures brewing alcohol for use in *shochu* and *sake*, as well as industrial alcohol, including alcohol used for sterilization.

➡ P16, P26, P35

Enhancing the flavors of life

FOOD

In addition to its conventional range of natural flavorings, the in-house Food Company has unlocked hidden dimensions of flavor with its range of Kokumi seasonings. Food Company's approach to this area of business is focused on the provision of solutions to meet the needs of customers involved in processed food manufacturing. A major success for the Food Company was the development of freeze-tolerant, and cold-sensitive baker's yeasts. This innovation has reduced the amount of late-night and early morning work required in bakeries while helping bakers to meet consumer demand for fresh-baked bread.

➡ P18, P26, P35

Supplying environment-friendly products to help the global environment

CHEMICALS

(Kyowa Hakko Chemical Co., Ltd.)

The Kyowa Hakko range of chemical products is broadly categorized into solvents, plasticizers and plasticizer raw materials as well as specialty chemicals. Solvents are used as materials for paints, inks and various other products. High-grade solvents are used in the production of electronic materials, while plasticizers and plasticizer raw materials are essential for the manufacture of synthetic resins. Products in the specialty chemicals category include environment-friendly products and raw materials for IT-related storage media.

➡ P19, P26, P35

Foreword

The Kyowa Hakko Group has worked to improve its earnings through business restructuring, aggressive expansion of sales and cost-cutting measures. In fiscal 2003, these efforts were reflected in healthy income results. However, there were also causes for regret. In fiscal 2003, one of our subsidiaries, Kyowa Yuka Co., Ltd. (now Kyowa Hakko Chemical Co., Ltd.), failed to meet the government standards for handling high-pressure gas, and as a result, the operation of related facilities was temporarily suspended. Asahi Foods Products Co., Ltd. implemented a voluntary recall of bread-crumbs products. I apologize sincerely for the concern and inconvenience that these events caused to many people, including customers and shareholders. A company's reputation is built on safe operations, compliance with the law and quality assurance. We have taken steps to prevent recurrences, and we are doing everything in our power to restore confidence in the Kyowa Hakko Group.

Corporate Philosophy and Social Responsibility

Kyowa Hakko's Corporate Philosophy*¹ originated in the ambitions of its founder, Benzaburo Kato, who wanted to eradicate tuberculosis from postwar Japan and improve the weakened physical condition of the Japanese people through the manufacture of antibiotics and amino acids by fermentation. When Kato was asked for advice about which of two research fields to choose, he told the person concerned to choose the field that would bring greater benefit to the world. In recent times we frequently hear the phrase "corporate social responsibility" (CSR). A company's social responsibilities are not limited to passive observance of obligatory requirements, such as legal compliance and compliance with environmental standards. Today companies are also judged according to the ways in which they

integrate their business activities with social systems and contribute to society. It is vital for the Kyowa Hakko Group that we contribute to society by giving concrete expression to our environmental commitment and our respect for humanity through our products and services.

This Sustainability Report describes aspects of the activities of the Kyowa Hakko Group in fiscal 2003 in relation to our customers, society and the environment. I am especially pleased to report that the Yokkaichi Plant of Kyowa Hakko Chemical has achieved a record of 21.26 million accident-free hours, and that there were no serious labor/work accidents or safety-related accidents. On the environmental front, we have been implementing a group-wide eco-project to reduce emissions to zero. We are now close to the achievement of that target, and our environmental accounting shows that we are balancing economic success with environmental success. We will continue our efforts to analyze and alleviate environmental problems, which we see both as part of our corporate responsibilities and as business opportunities.

Transition to Holding Company Structure

In April 2005, the Kyowa Hakko Group will shift from an in-house company structure to a holding company structure. This change will involve separating many of Kyowa Hakko's operations into companies to decentralize management and promote increased speed of decision-making, guided by constant sensitivity to market needs. As an initial step, in April 2004, our chemical operations became a separate company, Kyowa Hakko Chemical Co., Ltd. The aim of this separation was to achieve greater flexibility through the integration of research, development, production, logistics and marketing, thereby creating a structure that would

*1 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)

*2 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 our Social Performance Report (see pages 21–32).

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)

be better able to respond promptly to customer needs. Also in April 2004, we established the Corporate Compliance Division to strengthen the Kyowa Hakko Group's risk management functions and enhance its ability to meet its corporate social responsibilities. The mission of the Corporate Compliance Division is to oversee corporate ethics, quality assurance, environment and safety, all of which are crucial to our corporate reputation. The Kyowa Hakko Group has also established seven Management Guidelines*² based on its Corporate Philosophy. Activities relating to the environment and safety are guided by the Basic Policy on Health, Safety, the Environment, and Product Safety*³. These guidelines and policies will also be reflected in group management.

Prospects for Success and Growth

Kyowa Hakko has been strongly oriented toward research and development throughout its history. Today this focus is reflected in our corporate slogan, "Kyowa Bio-Innovator." Our aim is to enhance our corporate value and establish ourselves as an international research and development enterprise in the 21st century, by providing customer satisfaction through the creation of new value based on the effective use of life sciences and biotechnology. We see this focus, combined with business restructuring and the reinforcement of our financial structure, as the key to the continuing growth of the entire Kyowa Hakko Group.

All of our group companies are working to develop products that offer new value. In our pharmaceuticals business, we are developing innovative ethical drugs in fields in which we have particular expertise, such as cancer and allergies. We also aim to build a global antibody pharmaceuticals business based on our exclusive biotechnology-based antibody production methods. In our biochemical business, we devote huge effort to the creation



of high-added-value products that meet high quality and safety standards. Those products include health foods and pharmaceutical raw materials. We have integrated our health food operations into the Healthcare Division. Our chemical business, which is handled by Kyowa Hakko Chemical, is building an expanded range of environment-friendly products designed to reduce greenhouse gas emissions and prevent atmospheric pollution, as well as advanced functional products for use in the production of storage media in the information technology sector. The competitiveness of our food business is based on a range of food ingredients that assure consumer safety and help to enhance consumers' dietary lifestyles and enjoyment of food, and on a range of natural seasonings created using our unique technologies.

In the future, as in the past, the Kyowa Hakko Group will continue to contribute to the health and well-being of people worldwide by creating new value through the pursuit of progress in the life sciences and technology fields. We must work persistently to earn the trust and support of the public by reliably and promptly fulfilling our obligations and contributing in our areas of ability. We look forward to your continuing guidance and support.

September 2004

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

*³ 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.
(Introduced in January 1996)

* Guidelines pertaining to the above policy are outlined at right and on the following page.



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.

(Introduced in January 1996)

Action Plans and Performance in Fiscal 2003

The table below lists the medium-term action plans (fiscal 2002–2004) and targets for fiscal 2003, based on six guidelines for action relating to health, safety, the environment and product safety (Page 7), together with outcomes and assessments for fiscal 2003.

Guideline for Action	Initiative	Target																												
Expand the application of environmental management systems 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.	<ul style="list-style-type: none"> Establishment of ISO 14001 environmental management system <table border="1"> <tr> <td>Three principal companies</td> <td>Introduction of environmental activities assessment</td> </tr> <tr> <td>11 Consolidated subsidiaries</td> <td>Establishment of ISO 14001 system by fiscal 2004</td> </tr> </table> Integration of ISO 14001 and Occupational Safety and Health Management System (OSHMS) <table border="1"> <tr> <td>Three principal companies</td> <td>Establishment, introduction and operation of integrated management system in 2003</td> </tr> </table> Audits of consolidated and non-consolidated subsidiaries <table border="1"> <tr> <td>18 companies covered</td> <td>Engage in audits of 85% of Group companies annually</td> </tr> </table> Ensuring compliance <table border="1"> <tr> <td></td> <td>Zero legal infringements, zero complaints</td> </tr> </table> 	Three principal companies	Introduction of environmental activities assessment	11 Consolidated subsidiaries	Establishment of ISO 14001 system by fiscal 2004	Three principal companies	Establishment, introduction and operation of integrated management system in 2003	18 companies covered	Engage in audits of 85% of Group companies annually		Zero legal infringements, zero complaints																			
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[Production and R&D]																														
Ensure compliance and continuously improve performance 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.	<ul style="list-style-type: none"> Kyowa Eco-Project (KEP)  <table border="1"> <tr> <td>Unit energy consumption</td> <td>Reduction of unit energy consumption by 1% or more per annum</td> </tr> <tr> <td>CO₂ emissions</td> <td>Reduction of CO₂ emissions to fiscal 1990 levels or lower by fiscal 2010</td> </tr> <tr> <td>Volume of waste materials</td> <td>50% reduction in fiscal 2004 from fiscal 1998 levels</td> </tr> <tr> <td>Volume of waste disposal at landfill sites</td> <td>Achievement of zero emissions by 2007 Target: 250 tons</td> </tr> </table> Emissions of adverse air pollutants <table border="1"> <tr> <td></td> <td>97% reduction in fiscal 2004 from fiscal 1996 levels</td> </tr> </table> Atmosphere <table border="1"> <tr> <td>SO_x emissions</td> <td>2,595 tons*³</td> </tr> <tr> <td>NO_x emissions</td> <td>803 tons*³</td> </tr> <tr> <td>Dust emissions</td> <td>340 tons*³</td> </tr> </table> Water quality <table border="1"> <tr> <td>Fresh water usage volume</td> <td>—</td> </tr> <tr> <td>COD levels</td> <td>1,365 tons*⁴</td> </tr> <tr> <td>Nitrogen levels</td> <td>1,025 tons*⁴</td> </tr> <tr> <td>Phosphorous levels</td> <td>48 tons*⁴</td> </tr> </table> Disasters, accidents <table border="1"> <tr> <td></td> <td>Record no labor/work or environment- or safety-related accidents</td> </tr> </table> Distribution environment and safety <table border="1"> <tr> <td></td> <td>Rationalization of distribution, assurance of environmental and safety in distribution</td> </tr> </table> 	Unit energy consumption	Reduction of unit energy consumption by 1% or more per annum	CO ₂ emissions	Reduction of CO ₂ emissions to fiscal 1990 levels or lower by fiscal 2010	Volume of waste materials	50% reduction in fiscal 2004 from fiscal 1998 levels	Volume of waste disposal at landfill sites	Achievement of zero emissions by 2007 Target: 250 tons		97% reduction in fiscal 2004 from fiscal 1996 levels	SO _x emissions	2,595 tons* ³	NO _x emissions	803 tons* ³	Dust emissions	340 tons* ³	Fresh water usage volume	—	COD levels	1,365 tons* ⁴	Nitrogen levels	1,025 tons* ⁴	Phosphorous levels	48 tons* ⁴		Record no labor/work or environment- or safety-related accidents		Rationalization of distribution, assurance of environmental and safety in distribution	
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[Administration]																														
Consider the environment throughout the entire product life cycle 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.	<ul style="list-style-type: none"> Green Office Plan (GOP)  <table border="1"> <tr> <td></td> <td>Reduction of at least 1% per annum in power consumption</td> </tr> <tr> <td></td> <td>Reduction of at least 5% per annum in copy paper use</td> </tr> <tr> <td></td> <td>Promotion of green purchasing</td> </tr> </table> LCA/Material balance <table border="1"> <tr> <td></td> <td>Transparency in material balance at each business</td> </tr> </table> Green procurement (GP)  <table border="1"> <tr> <td></td> <td>Implementation of environmental consideration inquiries at business partner companies</td> </tr> </table> Packaging materials <table border="1"> <tr> <td></td> <td>Application of Guidelines for Environment-supportive Packaging Materials</td> </tr> </table> 		Reduction of at least 1% per annum in power consumption		Reduction of at least 5% per annum in copy paper use		Promotion of green purchasing		Transparency in material balance at each business		Implementation of environmental consideration inquiries at business partner companies		Application of Guidelines for Environment-supportive Packaging Materials																	
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Upgrade environmental and safety assessments 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.	<ul style="list-style-type: none"> Thorough environmental, safety and product safety assessments <table border="1"> <tr> <td></td> <td>Thorough environmental and safety assessment, risk management</td> </tr> </table> 		Thorough environmental and safety assessment, risk management																											
		Thorough environmental and safety assessment, risk management																												
Develop new products and technologies 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.	<ul style="list-style-type: none"> Environment-conscious technology and product development <table border="1"> <tr> <td></td> <td>Realization of development of technologies and products</td> </tr> </table> 		Realization of development of technologies and products																											
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<ul style="list-style-type: none"> Assurance of consumer safety and product user-friendliness <table border="1"> <tr> <td></td> <td>Comprehensive product information and disclosure</td> </tr> </table> 		Comprehensive product information and disclosure																												
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*1 An exclusive Kyowa Hakko indicator (Kyowa Eco-Index) that compares unit emissions with Japanese averages based on production values as follows:
 • CO₂, 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]
 CO₂ emissions: Carbon dioxide emissions in fiscal 2001 (Environmental Statistics Book 2004, Environmental Policy Bureau, Ministry of the Environment, Japan)
 SO_x, NO_x, dust emissions volume: Emissions in fiscal 1999, based on survey of fixed sources

affecting the atmospheric environment (White Paper on the Environment in Japan, 2003)
 Waste emissions volume, landfill volume: Industrial waste volume, treatment status in fiscal 2001 (March 1, 2004, 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 Kyowa Hakko Group / Net domestic product of prefectures surrounding closed bodies of water]

Key Achievements

There was significant progress toward the reduction of the final disposal at landfills and the improvement of water pollution indexes (COD, nitrogen, phosphorus). The Kyowa Eco-Project brought a 3.7% improvement in unit energy consumption, and the carbon dioxide emissions of the entire Kyowa Hakko Group were reduced to below the fiscal 1990 level.

Fiscal 2003 Performance (Status of Progress)		Evaluation*2		Medium-Term Target, New Target *3	Page
Introduction of environmental activities assessment		◎		Assessment of environmental activities	→ P10
System under development		○		Maintain same target	
Environment and safety management systems developed, activities based on risk management initiated		◎		Administration of environment and safety management systems	→ P49
Audits of sites of consolidated and non-consolidated subsidiaries (95%) and overseas sites		◎		Implementation of safety and environmental activities assessments in 2004	
Two cases of inadequate safety inspections of high-pressure gas facilities, six complaints (noise: 2, odors: 2, others: 2)		×		Zero legal infringements, zero complaints	
	Index 2002*1	Index 2003*1			
3.7% improvement from fiscal 2002 levels	—	—	◎	Average reduction in unit energy consumption of 1% or higher	
684,000 tons, 2.8% reduction from fiscal 1990 levels	1.0	0.95	◎	Achieve fiscal 2010 CO ₂ emissions at or below fiscal 1990 levels (Target achieved, reduction efforts continuing)	→ P40
158,000 tons, 50% reduction from fiscal 1998 levels	0.85	0.65	◎	Implementation of point-of-release measures	→ P42, 43
708 tons, 50% reduction from the previous year's levels 88% achievement rate of zero emission plan	0.056	0.029	◎	Achievement of zero emissions by fiscal 2007 Target: 400 tons in 2004, 250 tons in 2007	
9.9 tons, 97.6% reduction from fiscal 1996 levels	—	—	◎	Target achieved, reduction efforts continuing	→ P46
1,072 tons, 13% reduction from the previous year's levels	3.5	3.0	◎	Formulation of medium-range plan targeted toward radical reduction, continuing reduction efforts	→ P41
609 tons, 8% reduction from the previous year's levels	1.4	1.3	◎	Improve maintenance of facilities, ongoing reductions	
25 tons, 14% reduction from the previous year's levels	0.68	0.58	◎	Improve maintenance of facilities, ongoing reductions	
58.6 million tons, 7% accession from the previous year's levels	3.7	3.9	◎	Ongoing rationalization of water use	
651 tons, 39% reduction from the previous year's levels	3.0	1.8	◎	Source solutions	
471 tons, 16% reduction from the previous year's levels	1.8	1.5	◎	Source solutions	
20.5 tons, 11% reduction from the previous year's levels	1.0	0.8	◎	Source solutions	
Recorded two labor/work accidents with absence at three principal companies, two accidents at consolidated subsidiaries, and no environment or safety-related accidents	—	—	×	No labor/work accidents, no environmental or safety related-companies, accidents	→ P32
Reduced CO ₂ emissions by 4.6% from fiscal 2000 levels through rationalization of distribution and achieving zero distribution accidents Low emission cars accounted for 61% of cars in business use	—	—	◎	Rationalization of distribution, ensure environmental safety in distribution 100% corporate sales vehicles to be low-pollution vehicles by fiscal 2010	→ P32, 40 P48
2.2% reduction from the previous year's levels			◎	1% reduction in electricity use per year	→ P34
3.5% reduction from the previous year's levels			×	4% reduction in copy paper use per year	
Green purchasing of 56% of copy paper and office supplies Introduction of green office supply labeling (Pharmaceuticals Company) under green consumables purchasing system			○	Promotion of green purchasing	
Analyses conducted by Research Center for Life Cycle Assessment (National Institute of Advanced Industrial Science and Technology) using the LCIA method			◎	Ongoing business assessments through LCA/material balance assessments	→ P19, 35
Thorough environmental management assessment at business partner companies Revision of Green Procurement guidelines			◎	Improve environment-related activities with business partners Preferential use of environment-supportive raw materials	→ P34
Reduction of packaging and promotion of environmental consideration for food, biochemical and pharmaceuticals businesses			◎	Promotion of streamlined packaging	→ P25, 43
Accident prevention assessment (Sakai Plant) Environmental and safety risk management Quality assessment following shift to overseas production of intermediates (Ube, Hofu Plants)			◎	Thorough risk management	→ P12, 19 P32, 46
Supply of isononanoic acid as raw material for non-CFC refrigeration lubricants (production capacity expanded) Development of world's first mycotoxin analysis technology			◎	Development of environmental business outside of Company Analysis of sales of environment-friendly products	→ P14-19
Medical Information Center activities expanded Continuation of large-scale clinical trials of drugs for high blood pressure and angina targeted toward establishment of evidence-based medicine (EBM)			◎	Increased promotion of evidence based medicine (EBM) Further improvement of product information services	→ P22, 23 P25, 27

COD, nitrogen, phosphorous: Volume occurring in fiscal 1999 in regions targeted by water regulations (Fiscal 2003 Environmental Statistics Book, edited by the Ministry of the Environment)
 Net domestic product of prefectures surrounding closed bodies of water: Fiscal 2000 Prefectural Economic Accounts (Economic and Social Research Institute, Cabinet Office, Government of Japan)
 • Fresh water usage volume index = [Kyowa Hakko Group's total usage volume/Japan's total usage volume]/[Kyowa Hakko Group's total production value/Japan's net domestic product]

Fresh water usage volume: Fiscal 1999 domestic non-commercial water (14.3 billion tons) + industrial water fresh water replacement volume (12 billion tons)
 (Data: Water Resources Department, Ministry of Land, Infrastructure and Transport)
 *2 Evaluation ◎: Achieved target, ○: Improved, but did not achieve target, ×: Target not reached
 *3 The target is 50% of the emission level conforming to the legally mandated concentration.
 *4 The target is 50% below the agreed-upon level
 *5 Unless otherwise stated, the target year is fiscal 2004.

Environment and Safety Management Systems

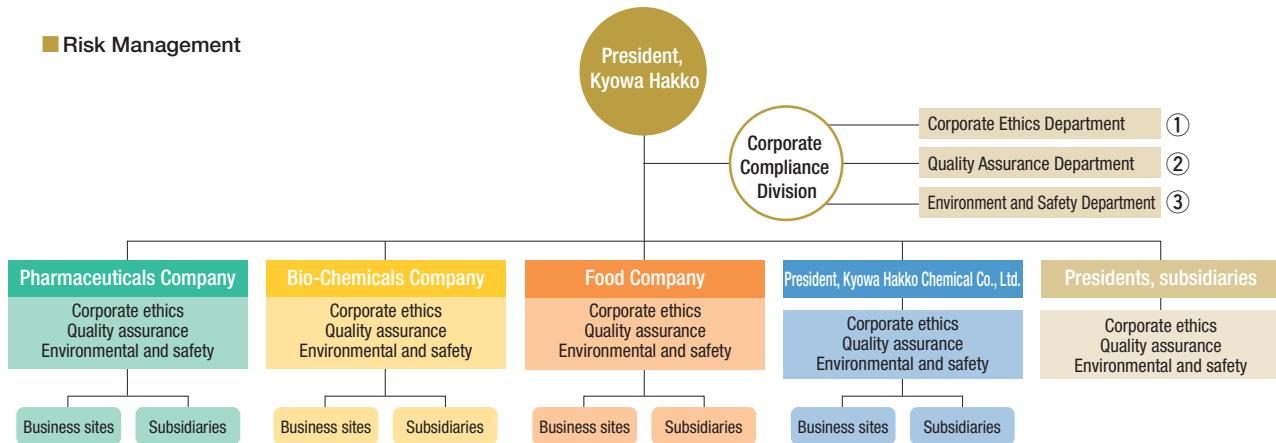
As part of its transition to a holding company structure, the Kyowa Hakko Group has established a Corporate Compliance Division and is strengthening its management from the viewpoint of Responsible Care and corporate social responsibility (CSR).

- The Kyowa Hakko Group is moving from an in-house company structure to a holding company structure centering on pharmaceuticals and biochemicals.
- The Corporate Compliance Division was established to strengthen risk management for the entire Kyowa Hakko Group.
- Risk management is being continually improved through repeated plan-do-check-act (PDCA) cycles (see diagram on right) based on policies set by the President of Kyowa Hakko in the area of corporate ethics, quality assurance, the environment and safety.
- ISO 14001 certification has been achieved at all nine plants operated by Kyowa Hakko Kogyo Co., Ltd., Kyowa Hakko Chemical Co., Ltd. and Kyowa Medex Co., Ltd. Other subsidiaries are currently developing systems.
- The Kyowa Hakko Group has integrated ISO 14001 with Occupational Safety and Health Management Systems (OSHMS) to create management systems that are used as tools for Responsible Care activities.

Transition to a Holding Company Structure and Establishment of Corporate Compliance Division

Management reform in the Kyowa Hakko Group has been driven by rapid decision-making and the devolution of authority. In April 2005, the Group plans to shift to a holding company structure. The aim of this change is to bring the focus of business development closer to customers, to strengthen the shared technology base of the Kyowa Hakko Group and to enhance the Group's growth potential.

Responsible care consists of consideration for the environment and safety at all stages of the product life cycle, from development through to disposal. The Kyowa Hakko Group is fully committed to the spirit of this concept. It has established the Corporate Compliance Division (see organization chart below) to strengthen the Group's risk management on a level that includes corporate social responsibility (CSR).




The Corporate Compliance Division is responsible for the development of risk management systems for the entire Kyowa Hakko Group. Its tasks also include policy control, monitoring, the development of regulations, and the administration of various committees. All of the in-house companies and newly separated companies have established departments responsible for corporate ethics, quality assurance and

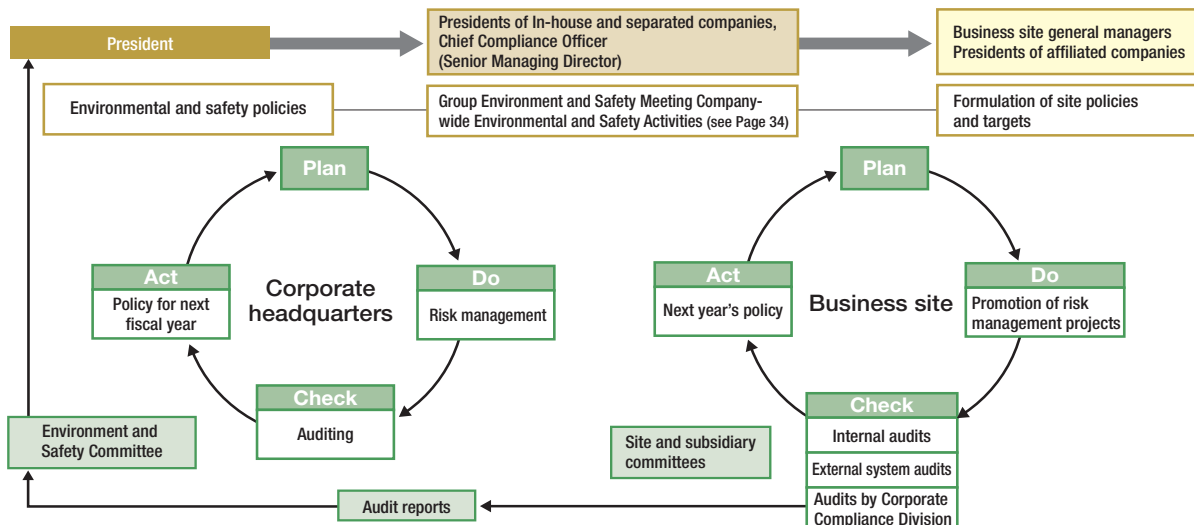
environmental and safety considerations. These departments will coordinate risk management activities at the business sites and subsidiaries for which each in-house company is responsible. The following chart illustrates the environmental and safety risk management system. Risk management relating to corporate ethics and quality assurance is also based on the PDCA cycle.

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)



■ Environment and Safety Management



Corporate Ethics and Compliance

Corporate Ethics

The Kyowa Hakko Group recognizes the importance of corporate ethics. In addition to the formulation of the Kyowa Hakko Ethical Principles, it has also worked to raise awareness among all employees by distributing guidelines.

The development of the Ethical Principles was the work of the Corporate Ethics Committee, which was established in 1998 to ensure and promote ethical behavior and earn the confidence of the general public. The Corporate Ethics Committee also formulates ethical codes of conduct for employees. In addition to corporate directors and employees, outside members, including lawyers and academic experts, also fill Committee positions as required. The Corporate Ethics Department was established in 2001 under the guidance of the Corporate Ethics Committee. As a department specializing in ethical compliance, its role is to provide ethical training linked to employees' specific job areas and to inform people within the Kyowa Hakko organization about the Kyowa Hakko Ethical Principles through activities that include website management and the establishment of an advice help-line. The Corporate Ethics Department also works actively to maintain compliance by monitoring corporate ethical behavior, and by operating dual hotlines for internal and external use. In 2004, the Department evolved into the Corporate Ethics Department of the Corporate Compliance Division. Its role has expanded to include activities designed to ensure ethical corporate behavior throughout the Kyowa Hakko Group. Also in 2004, a specialist research organization in Japan (Integrex Inc., <http://www.integrex.jp/>) listed Kyowa Hakko among the top 50 Japanese companies in terms of integrity and transparency.



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

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 antisocial 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.

Acceptance of European Commission Ruling on Lysine Cartel

June 7, 2000, Kyowa Hakko and Kyowa Hakko Europe GmbH ("KHEG") had a fine of 13,200 thousand euro imposed on them by a Decision of the European Commission with allegations that Kyowa Hakko and KHEG had violated EU competition law due to their involvement in a cartel for the sale of amino acid lysine within EEA prior to June 1995. On August 25, 2000, Kyowa Hakko and KHEG lodged an appeal to the Court of the European Communities with regard to the amount of the fine. However, the Company decided to accept the ruling of the European first court of instance on July 9, 2003 to recognize that the European Commission's verdict in question is appropriate and to pay the above-mentioned fine (13,200 thousand euro). The amount accounted for as a fine regarding lysine sales within EEA is the difference between the fine and accrued liability accounted in fiscal year 2001 (1,120 thousand euro) and interest for delay of payment of the fine.

Environmental, Safety and Product Safety Assessments

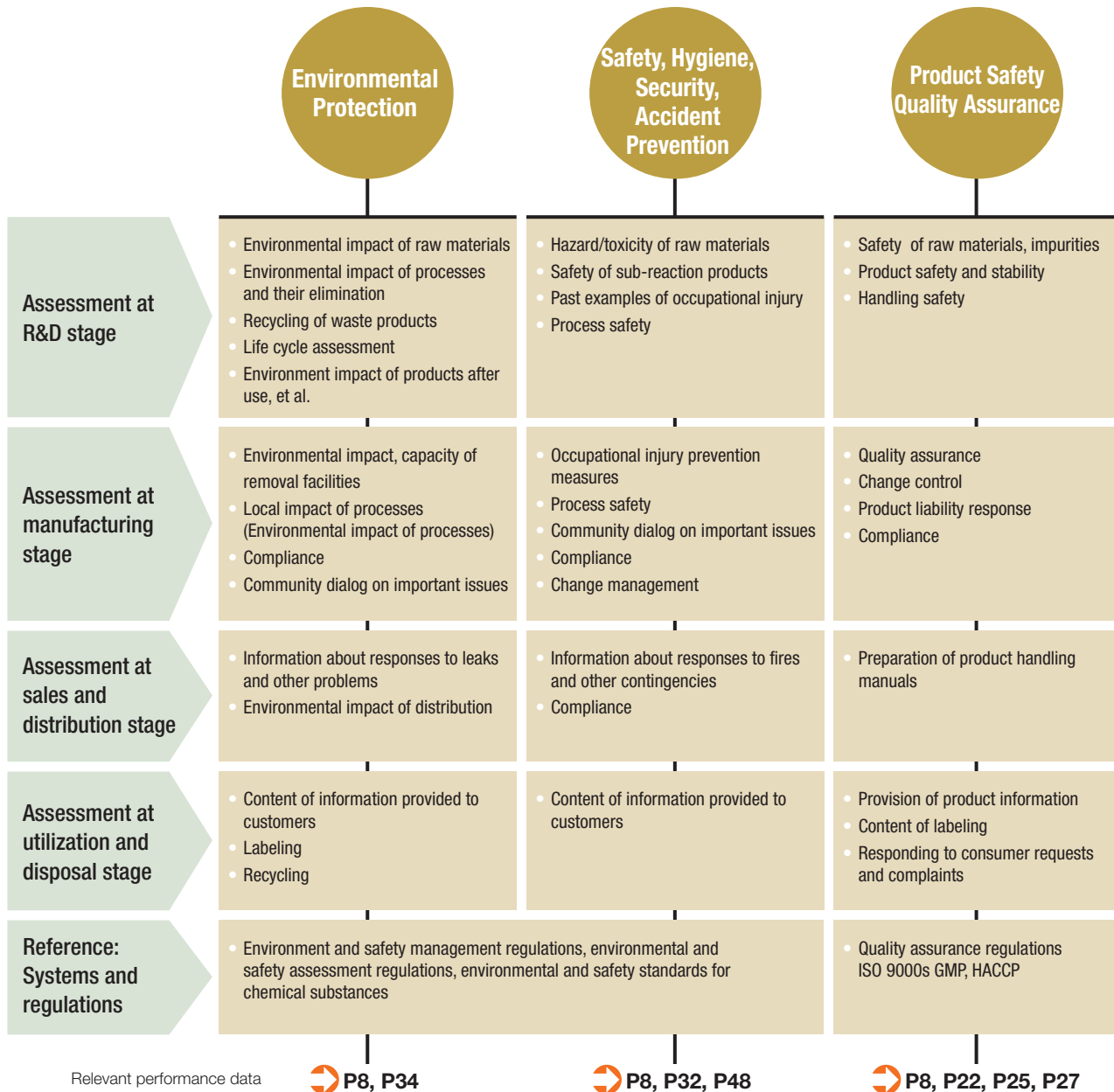
In accordance with the Responsible Care Code and the Basic Policies relating to the environment, safety and product safety, the Kyowa Hakko Group gives first priority to the safety of consumers while working to ensure the health and safety of its employees and reduce environmental loads through the operation of its assessment system.

Assessment System Covering all Stages from Development to Utilization and Disposal

The results of environmental, safety and product safety assessments are important criteria for decisions about product commercialization. Among the steps that must be completed before products and services can be supplied commercially through the business operations of the Kyowa Hakko Group is the systematic analysis of both the effectiveness of the prod-

ucts and services, and also their impact on the environment and the safety. Through this system, the Kyowa Hakko Group applies stringent safety and environmental criteria to its products at all stages from development and production through distribution, sales, utilization and disposal.

Main Evaluation Processes from Research and Development through to Use and Disposal





New Products and Technologies to Help Society and the Environment

Kyowa Bio-Innovator—These words express the determination of the Kyowa Hakko Group to maximize its corporate value by applying the full potential of the life sciences and bio-technology to the creation of new value. At the research and development level, this commitment has resulted in the creation of a wide spectrum of technologies, raw materials and products that help to maintain and support good health, bring new variety to daily living, and protect the environment.

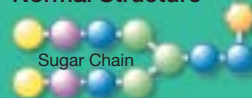
Telling the World about Kyowa Hakko Technology

New Drugs with Real Value

POTELLIGENT™ Technology



Normal Structure ↓ Fucose



One of Kyowa Hakko's most important development achievements is POTELLIGENT™ technology. This core technology dramatically enhances the activity of therapeutic antibodies, regarded as the most active category of biotechnology-based drugs.

Therapeutic antibodies are pharmaceutical products manufactured through the use of genetic engineering and other methods to produce artificial antibodies, which provide immunity by attacking foreign substances in our bodies. Because therapeutic antibodies act directly on substances that cause disease, side-effects are minimal.

The POTELLIGENT™ technology developed by Kyowa Hakko dramatically enhances the antibody-dependent cellular cytotoxicity (ADCC) of antibodies. This is achieved by deleting a single sugar, called "fucose," in sugar chains attached to antibodies. There are major advantages with this approach.

Enhanced therapeutic effects:

Target cells, including cancer cells, can be destroyed more effectively.

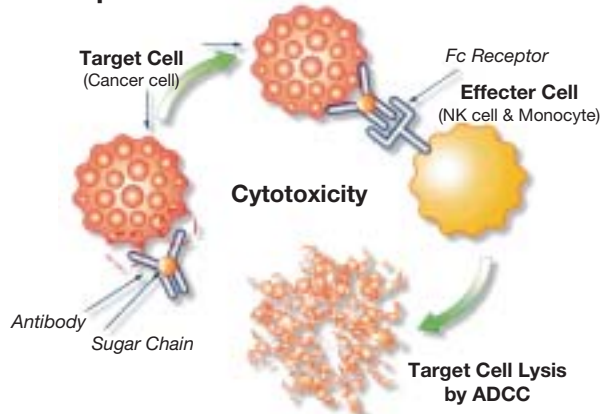
Improved safety:

Because dosages are lower, there is the potential for reduced side-effects.

Reduction of medical costs:

Both the quantities that need to be produced and the cost of production can be reduced.

BioWa, Inc., a Kyowa Hakko subsidiary based in the United States, was established in 2003 to introduce POTELLIGENT™ technology to pharmaceutical companies and biotechnology firms throughout the world. Using a networked approach, it has made rapid progress. In addition to licensing-out the new technology, BioWa also seeks participation in joint development activities. It has already signed contracts with several biotechnology firms. Kyowa Hakko technology is expected to make a major contribution to the development of safer and more effective therapeutic antibodies by companies around the world.

ADCC Plays a Crucial Role in Many Therapeutic Antibodies.

Antibody-dependent cellular cytotoxicity (ADCC) is an important anti-tumor mechanism used by many therapeutic antibodies. There is intense international interest in next-generation antibody utilization technologies that enhance this action. Because the effect is enhanced, diseases can be treated with lower drug dosages. This feature is expected to bring major benefits, including lower costs and reduced side-effects.

For further information

Corporate Communications Department, Kyowa Hakko Telephone: +81 (3) 3282-0980



BioWa, Inc.

BioWa, Inc. was established in Princeton, New Jersey, U.S.A., in February 2003. Its office is located in the building occupied by Kyowa Pharmaceutical, Inc., a non-consolidated subsidiary that functions as the Kyowa Hakko Group's clinical development base for North America. BioWa has built a team of Japanese and American specialists in finance, business and law. Its approach to business combines a sense of speed with dedication to quality. The achievements of this dynamic new company already include sponsorship of BIO2004, one of the world's biggest international conferences in the biotechnology field.



The home of BioWa

Scope of Job

Martina Molsbergen, Director, Business Development



My role is to seek new partners for BioWa's exciting POTELLIGENT™ technology and to implement BioWa's business strategies. We are successfully attracting new alliances with biotech and large pharmaceutical companies to generate new drugs for cancer and other indications. POTELLIGENT™ technology is certain to revolutionize the treatment of cancer and other life-threatening diseases.

Working at Kyowa Hakko's subsidiary has been a rewarding experience thus far both professionally and personally. We have implemented a phenomenal team, which has been key to driving the business forward at such a record pace. BioWa is currently recognized as a commanding leader in antibody technology.



The BioWa Team

Research and Development Focusing on Biological Substances

Delicious Ways to Enjoy the Benefits of Amino Acids



Remake® BCAA



Remake® Arginine



Remake® Ornithine



Remake® Glutamine

The development of delicious ways to enjoy the health benefits of amino acids is a continuing research focus for Kyowa Hakko.

The health benefits of amino acids have become widely known in Japan in recent years, and many products based on these substances are available on the market. However, amino acids have varying flavors, and some are bitter, and it was difficult to create palatable amino acid products. Manufacturers were especially keen to improve the flavors of leucine, isoleucine, and valine. Known as the "branched-chain amino acids" (BCAAs), these substances are useful for fatigue recovery and muscle development. Working with university researchers, Kyowa Hakko discovered that the bitterness of BCAAs could be ameliorated by mixing them with another amino acid called "ornithine," which helps to maintain and strengthen the liver and muscles. Kyowa Hakko will continue to develop amino acid supplements that taste good and are good for health.

Kyowa Hakko is also supporting the development of technology to compress amino acids into tablet form. The aim is to create amino acid supplements that can be carried conveniently in the pocket or purse for consumption anywhere.

Developing a Wide Spectrum of Biological Substances

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), 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.

Amino Acid Seminar
October 20, 2003**For further information**

Development Department, Bio-Chemicals Company, Kyowa Hakko Telephone: +81 (3) 3282-0995



Integration of Healthcare Businesses

In April 2004, the healthcare activities of the Kyowa Hakko Group, which were previously divided among several business units, were integrated under the Bio-Chemicals Company. 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.

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 impact of various combinations of health-food ingredients on human health. 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.



Members of the Healthcare Research Laboratories

Remake[®] Amino Acids

Choose and use to suit individual needs

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 on 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.

As a manufacturer of high-grade amino acids, Kyowa Hakko saw the need for better ways to reap the important health benefits of these substances. By focusing on the functions of individual amino acids, it was able to develop a new product line that allows consumers to select the exact amino acids with the properties that they need, either individually or in combinations. Traditionally, amino acid supplements were used mainly by athletes, but the development of Kyowa Hakko's "Remake" range of amino acids has made these important health foods readily available to general consumers for use as part of their daily diet.

Developing Kokumi Seasonings

Kokumi—the Subtle Key to Deeper Flavors

How flavors are sensed after food is put into the mouth



Kokumi means flavor intensity and continuity

Commercial *kokumi* seasonings were first developed 10 years ago. Now the true nature of *kokumi* is finally understood.

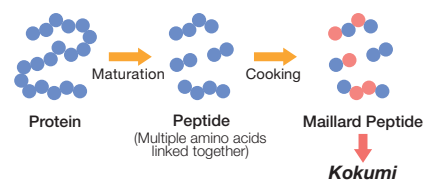
Kyowa Hakko has worked intensively to discover the true nature of the *kokumi* phenomenon and to recreate its effect in seasonings. The diagram (above right) shows how the taste experience changes with the passage of time after food is placed in the mouth. With simmered food, for example, there is a natural intensification of the full flavors that exist in food before cooking. Another feature of the *kokumi* effect is the continuity of flavors lasts for a prolonged time in the mouth.

Though the word “*kokumi*” appears to exist only in Japanese, foods that provide the *kokumi* experience can be found all over the world. Kyowa Hakko has discovered substances associated with the *kokumi* effect in well matured Gouda cheese. The cheese in question is manufactured by the northern Dutch company Cono Kaasmakers under its “BeemsterKaas” brand. Cheese sold in the Netherlands is matured for between three and seven years after production. An analysis of cheese matured for seven years led to the discovery of peptides that had undergone the Maillard reaction (see diagram on right), and it was found that the amount of Maillard peptides increased during the latter years of the aging period. The Maillard reaction is known to cause browning and the production of delicious aromas during cooking.

This research led to the development of the commercial seasoning MP300. Processed food companies use MP300 to give flavor intensity and enhanced deliciousness to noodle soups, curries, stews and Chinese *mabo* sauce.

Kyowa Hakko will continue to explore the mechanisms of food maturation and cooking. This work is leading to the development of new technology based on enzymatic reactions and cooking reactions, and to the creation of new types of *kokumi* seasonings to enhance flavor intensity.

Kokumi Generation Process



For further information

Food Marketing Department, Food Company, Kyowa Hakko Telephone: +81 (3) 3282-0090

Environment-Supportive Chemical Products

Protecting the Earth



Isononanoic Acid—a raw material for non-CFC (HFC) freezer lubricants

Although specified CFCs (HCFCs) are still used as refrigerants, the use of these substances will be totally eliminated in the United States by 2010 as part of efforts to prevent ozone layer depletion. Air conditioners and refrigerator-freezer equipment designed to use alternative refrigerants (HFCs) that do not damage the ozone layer also require lubricants that are suitable for use with HFCs. The substances used to manufacture these lubricants include isononanoic acid, octanoic acid and polyvinylether. Isononanoic acid is a synthetic fatty acid manufactured only by Kyowa Hakko Chemical in Japan. Kyowa Hakko aims to contribute to protection of the ozone layer by increasing its production capacity for this product from 5,000 tons at present to 12,000 tons by 2005.

Diacetone Acrylamide (DAAM)

For Use in Water-Based Coatings

Diacetone acrylamide (DAAM) manufactured by Kyowa Hakko Chemical is used in the manufacture of water-based coatings for application on building exteriors and wooden products such as kitchen cabinets. Because organic solvent emissions can be dramatically reduced by using water-based coatings containing DAAM, they are both health-friendly and environment-friendly and can therefore be used to repaint areas occupied by people. They are also more durable than earlier products. Manufacturers of motor vehicles and electrical and electronic goods are also studying the use of these paints as a way of reducing emissions of organic solvents.

For further information

Business Unit II, Kyowa Hakko Chemical Telephone: +81 (3) 3510-3560

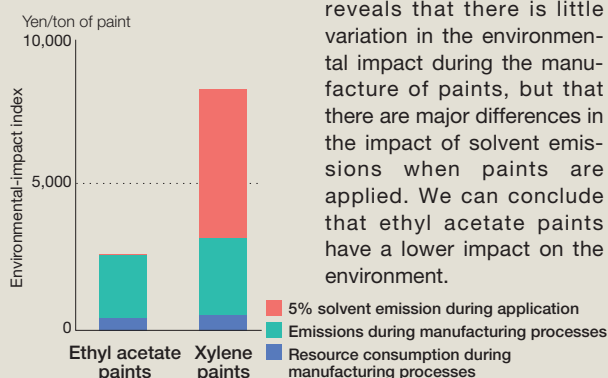
Low Environmental-Impact Solvents

Environmental-Impact Assessment of Ethyl Acetate Using LIME Method

Kyowa Hakko uses the Life-cycle Impact Assessment Method based on Endpoint Modeling (LIME) method to conduct comparative assessments of typical solvents, such as xylene and ethyl acetate, which are used in paints and other products. These assessments are carried out under the guidance of the Research Center for Life Cycle Assessment of Japan's National Institute of Advanced Industrial Science and Technology.

The LIME method is used to estimate the total environmental impact of these products at all stages, including the use of raw materials from the extraction of crude oil to the manufacture of paints, and energy consumption. The method also assesses loads on the air and water environments by factory emissions. The release of solvents into the atmosphere during the application of paints is also taken into account.

As shown in the graph, a comprehensive assessment reveals that there is little variation in the environmental impact during the manufacture of paints, but that there are major differences in the impact of solvent emissions when paints are applied. We can conclude that ethyl acetate paints have a lower impact on the environment.



Environmental Activities, Environment-Related Research and Development

Principal Environmental Management Activities

- 1964** Production of organic fertilizer using recycled fermentation mother liquor at the Hofu Plant
- 1968** Wastewater treatment facility introduced at the Hofu Plant
- 1971** Wastewater combustion facility introduced at the Yokkaichi Plant
- 1973** Creation of Safety and Environmental Management systems at Kyowa Hakko and Kyowa Yuka
Acetaldehyde removal facility introduced at the Yokkaichi Plant
- 1975** Wastewater treatment facility introduced at all Kyowa Hakko and Kyowa Yuka plants
Flue gas desulfurization equipment introduced at the Yokkaichi Plant
- 1977** Kyowa Hakko won first Director General of the Environment Agency Award for implementing closed systems to process waste material and contributing to an improvement in waste quality in bodies of water near Hofu Plant
- 1979** Introduction of biodenitrification and dephosphorization process to wastewater treatment facilities
- 1981** Under a Companywide energy conservation project, Kyowa Hakko achieved a 20% reduction in energy use
- 1993** Formulation of policies for environmental protection
- 1996** Implementation of Responsible Care
- 1997** Recycling of *shochu* distillate begun at the Moji Plant, Kyowa Hakko ended ocean dumping
- 1998** Vast reduction of COD levels in wastewater
Installation of cogenerator at the Chiba Plant
- 1999** Implementation of deodorizing facilities at the Hofu Plant
Publication of the Health, Safety, and the Environment Report
Installation of new organic fertilizer production facility under the energy-saving and environmental protection systems
- 2000** Enhancement of NOx removal facility at the Yokkaichi Plant
Received ISO 14001 certification at eight Kyowa Hakko and Kyowa Yuka plants
- 2001** Installation of low-NOx burners, fortified SOx measures
ISO 14001 certification of Kyowa Medex's Fuji Plant
Affiliates began construction of EMS based on ISO 14001 standards
- 2002** Completion of incinerator upgrades and shutdowns to comply with Waste Management and Public Cleansing Law
- 2003** Installation of energy-saving air distributors for wastewater treatment facilities at the Yokkaichi, Hofu and Fuji plants



Principal Achievements in Environment-Related Products and Technology Development

- 1970** Contributed to meat production with amino acid additives for stock feed
Used an oxo process to recover CO₂
- 1981-1986** Participated in a MITI-sponsored national research project on converting unused biomass into fuel oil
- 1993** Developed and commercialized Landfill Liner, polyurethane sheets for final waste-disposal sites
Developed and commercialized cleaner and new raw lubricant for refrigerant used as CFC substitute
- 1996** Developed and commercialized phytase, an enzyme used in feed additives to prevent environmental damage caused by the livestock industry
- 1997** 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
- 1998** Through joint research with Tsuji Oil Co., Ltd., developed and commercialized a process that converts *shochu* distillate into animal feed
- 1999** The Japan Scientific Feeds Association presented Kyowa Hakko with the Technology Award in recognition of the Company's efforts, through its business activities in amino acids and enzymes for feed additives, to promote the development and wide usage of feeds that reduce environmental impact.
Shifted to easy-to-recycle materials for PET bottles for *shochu* products
Promoted elimination of metal cans by the Bio-Chemicals Company
- 2000** Marketed an organic wine with no additives
Promoted environment-conscious packaging, such as that eliminating outer packaging materials for medical products
- 2001** Developed and implemented new dichloromethane-free production process
- 2002** Increased efforts toward achievement of zero emissions
Start of shipments of all-fiber drums
Start of eco-tanker services
- 2003** Launch of mycotoxin analysis method onto market



Social Performance

There is an important social perspective to our business activities. The medical community places considerable value on the efforts of the Kyowa Hakko Group to provide drug-related information concerning treatment methods that enhance patients' quality of life. User confidence in Kyowa Hakko products has been further enhanced through the Group's cooperation in international safety assessment activities. The Kyowa Hakko Group also strives to monitor and raise customer satisfaction levels. Kyowa Hakko plants are continually enhancing their communication with local communities through community dialog activities. The Kyowa Hakko Group is promoting interest in science among young people.

Contributing to Society through the Pharmaceutical Business

The entire Kyowa Hakko Group is working to improve customer satisfaction. The aim of the pharmaceuticals business is to contribute to patient-focused care in the medical community. The Kyowa Hakko Group is determined to contribute to the health of people worldwide by supplying a wide range of pharmaceutical products, including cardiovascular agents, antiallergic agents, central nervous system agents and anticancer agents.

Social Interfaces for Pharmaceuticals

Pharmaceuticals can be defined as “chemicals combined with information.” They 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 to front-line medical professionals by medical representatives (MRs), whose 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 even better 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.

Sales and Marketing Transformation (SMART) Program

In October 2002, the Pharmaceuticals Company launched a Sales and Marketing Transformation Program, known as the “SMART” program, designed to improve both the quantity and quality of information supplied to professionals in medical institutions. In the current year, it conducted a survey to determine the level of improvement in the activities of MRs serving general practitioner as a result of this initiative. The survey involved monitoring by an outside research organization to ascertain the manner in which pharmaceutical information is given to medical institutions, and the usefulness of that information. The results indicated that physicians believed that the information provided had helped to increase their awareness of product characteristics, including pharmacological effects on diseases, and effects when used in conjunction with other products.



MR Activities



Workshop

Information and Communication

Medical Information Center

Responding to Consumer Inquiries

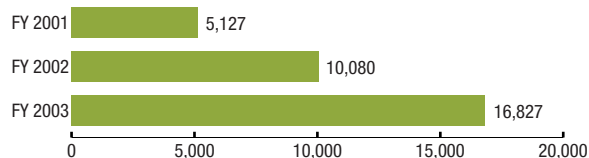
The Kyowa Hakko Medical Information Center responds to inquiries from medical professionals, and from patients and their families in Japan. In June 2001, a toll-free line was installed to encourage increased use of the service by medical professionals. The number of inquiries has risen from 5,127 in fiscal 2001 to 10,080 in fiscal 2002 and 16,827 in fiscal 2003. This continuing growth indicates that the service is making a significant contribution to medical care. (See graph.)

The Medical Information Center is also an important source of feedback. Selected inquiries are used as feedback concerning areas in which customers may need additional information to ensure that products



Medical Information Center

■ Growth in Number of Inquiries



can be used appropriately and safely. For example, approximately 2.2% of inquiries about anticancer drugs (115 calls in fiscal 2003) are about procedures in the event of exposure to the skin or eyes or if extravasation occurs. Because these problems can have very serious consequences, the provision of information about prevention and treatment is extremely important. In 2004, Kyowa Hakko revised its booklet about extravasation of anticancer drugs. The booklet focuses in particular on the resulting skin problems and describes appropriate countermeasures. It has been distributed to medical professionals and is also available on Kyowa Hakko’s pharma-

ceutical website. The pharmaceutical website is designed for medical professionals. It is available seven days a week throughout the year, including public holidays, as a source of the latest information about pharmaceutical products. The information provided is divided into three categories.

1. Basic product information

Prescribing information, product overviews, interview forms and answers to frequently asked questions, including questions about interaction between pharmaceuticals.

2. Reference documents

Information about the handling of pharmaceuticals, including data about incompatibilities and product stability

3. Patient information

Reference documents for use when informing patients about the use of drugs

Access to information to ensure that drugs are used correctly is extremely important. Kyowa Hakko remains actively committed to the prompt provision of accurate information for use in medical care.

Publications

Kyowa Hakko provides a wide range of information to medical professionals through its Japanese publications, including *Yaku datsu Hanashi* ("Useful Information") for pharmacists.



Ms. Nobuko Onami, Pharmacist, Donguri Kobo

Of the booklets produced by pharmaceutical companies for their customers, *Yaku datsu Hanashi* seems to have the most balanced content. Many of the special features at the beginning of each issue raise important and often difficult issues about the role of pharmacists. I also find the "Pharmacy Reportage" section very useful as an opportunity to learn about innovations and ideas from other pharmacies. Though compact, the publication offers a wide range of content, including specialist articles, political commentary, discussions about systems, and even essays.

The yearly special issue containing the survey has taught pharmacists about the importance of customer satisfaction as a new perspective for their work. Analyses of the survey results are presented at annual conferences and cited in other documents. I believe the data to be scientifically reliable, and we use the survey issue as a textbook for seminars at our pharmacy.

I see *Yaku datsu Hanashi* as a call for a strong patient focus in the medical-care sector. As a pharmacist, I also feel supported and valued when I read this publication.



Support for Academic Seminars and Research Workshops

Pharmaceuticals cannot be used effectively unless medical professionals and patients are fully informed about their characteristics. Kyowa Hakko continually supports the operation of academic seminars as well as research workshops and symposia as part of its efforts to disseminate information about its pharmaceuticals.

Patient-Focused Treatment for High Blood Pressure *Coniel*®—Large-Scale, Post-Marketing Clinical Trial for Flagship Product

Today there is a strong emphasis on evidence-based medicine (EBM) as a way of ensuring that patients receive the best possible medical care based on high-quality information. Kyowa Hakko has launched a large-scale clinical trial of the antihypertensive drug, *Coniel*®, which was first introduced 13 years ago as a major ethical drug. The trial is being conducted jointly with Yamaguchi University.

In Japan, clinical trials for products already on the market are generally small in scale with 100-300 subjects. The studies also tend to cover relatively short periods of around one year. Yet, reports from other countries describe trials involving as many as 40,000 subjects. By comparison, clinical trials carried out in Japan appear quite inadequate in terms of both scale and duration.

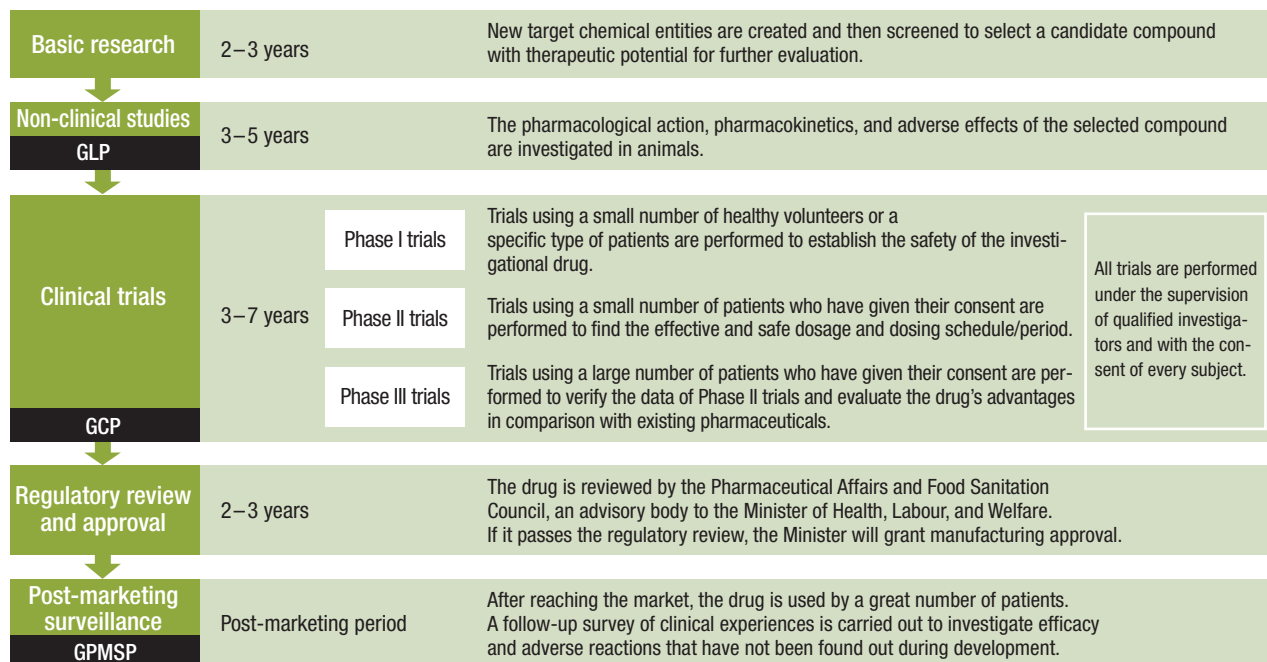
Known as the COPE Trial (Combination Therapy of Hypertension to Prevent Cardiovascular Events Trial), Kyowa Hakko's current project will involve the administration of the drug over a three-year period. *Coniel*®, which is a calcium antagonist, is being administered as the standard drug, in combination with an angiotensin II receptor antagonist, a beta blocker, or a diuretic. These are antihypertensive drugs that have different action mechanisms. This is a large-scale study involving 3,000 subjects. Its purpose is to analyze and verify the safety and efficacy of *Coniel*® in each combination by gathering data from 1,000 subjects for each of the three regimens. The process began in April 2003 with a pilot trial. The results of the interim analysis, which will be completed by mid-2004, will be reflected in the full trial, which is scheduled to commence in October 2004. The trial will continue until 2009.

Another important benefit from the COPE trial will be its contribution to the development of reliable scientific evidence about the effectiveness of therapies based on combinations of drugs. This aspect has attracted considerable interest from the medical and scientific community, since previous trials in Japan have simply sought to verify effectiveness of individual drugs.

The Japanese Society of Hypertension plans to use the results of this trial as the basis for a review of its current guidelines for the treatment of high blood pressure. Cardiovascular specialists regard the trial as extremely significant, both for its contribution to the development of evidence-based medicine in the hypertension field, and also because of the potential for improvements in the effectiveness of therapies for patients.

Approach to Drug Development

New Drug Development Process^{★1}



★1 This table is quoted with corrections from the Japan Pharmaceutical Manufacturers Association Guide 2000.

★2 For example, the Pharmaceutical Research Center has established Animal Testing Guidelines consisting of 12 articles in three chapters.

Appropriate Animal Testing

Stringent assessment of the effectiveness and safety of new drugs is an essential part of the development process for new drugs (see diagram above). Animal testing is used as a non-clinical stage preceding the administration of new drugs to human subjects during clinical trials. Only after safety and effectiveness have been verified through animal testing and clinical trials can a new drug be approved.

Kyowa Hakko's Ethical Standards for Animal Testing are based on legal and academic guidelines. Kyowa Hakko has also established Animal Testing Guidelines^{★2} for each of its business sites. Committees established at head office and site levels administer these guidelines to ensure that all animal testing is conducted appropriately. Kyowa Hakko directs researchers to consider alternatives to animal testing, to select appropriate species, and to ensure that the scale of testing is appropriate. Researchers are also required to provide proper care for animal subjects, and to avoid unnecessary suffering. All research staff is made fully aware of these and other requirements concerning the safety, ethics and effectiveness of animal testing. Head office verifies compliance through regular monitoring.

Kyowa Hakko is also working to reduce the number of animals used for testing through the development of alternative methods. These include the use of cultured cells to assess therapeutic efficacy, measure metabolic activity (by using liver cells, etc.) and predict side-effects, such as those affecting heart functions.

- **Chapter 1: General Provisions (5 articles)**
- **Chapter 2: Animal Testing Facilities (3 articles)**
- **Chapter 3: Animal Testing (4 articles)**



The quest for new drugs

Environmental and Safety Considerations for Pharmaceutical Products

Disposal of Waste Products

Kyowa Hakko strictly controls the disposal of waste products, including intermediates used in production processes. In principle, all waste products are incinerated. Kyowa Hakko is also conducting research into related environmental and safety issues, including the fate of materials released into the natural environment.

Appropriate Disposal of Unused Pharmaceuticals

Kyowa Hakko collects unused pharmaceuticals, including surplus and recalled products or items that have passed their expiry dates, through the same distribution channels that it uses to supply pharmaceuticals to hospitals or other medical institutions. These products are accumulated at sites in eastern and western Japan for appropriate disposal.



A poster for medical professionals

Improving Containers and Packaging Materials for Pharmaceutical Products

Though the volume of packaging materials used for pharmaceutical products is relatively small, Kyowa Hakko requires all business units in its group to reduce the environmental load and promote recycling. Examples of improvements in this area include the discontinuation of external packaging, and the marking of packaging to indicate the materials used. Other initiatives are described on Page 43.

Kyowa Hakko is also helping to prevent medical accidents caused by misreading of instructions. For example, product names in Japanese are now shown in phonetic script, and larger typefaces are used. In addition, Kyowa Hakko supplies warning notices to medical professionals as part of its efforts to prevent medical accidents resulting from the confusion of pharmaceuticals with similar names. These initiatives to make pharmaceuticals more readily identifiable are helping to improve patient safety.

Assessing the Safety of Chemical Products

Kyowa Hakko conducts 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 are currently in progress under the auspices of the Organization for Economic Cooperation and Development (OECD). Kyowa Hakko has participated in the High Production Volume (HPV) and Long-range Research Initiative (LRI) initiatives of the International Council of Chemical Associations (ICCA) and has produced assessment work reports as the leader company for two HPV products. One of these reports has been posted on the United Nations Environmental Program (UNEP) website. Kyowa Hakko is also working as a supporting company for 11 products, including three for which assessments have already been completed. It is currently involved in international collaboration on assessments for six 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.

- 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.

These findings suggest that previous risk assessments for DEHP, which were based on rodent tests, need to be reviewed.

The results of these tests were presented at the 42nd Annual Meeting of the Society of Toxicology in March 2003. The distribution of DEHP in rodent and marmoset bodies is currently the subject of another study. Preparations are also being made for reproductive toxicity tests involving the exposure of marmosets during pregnancy and lactation.

DEHP is also one of the substances covered by the Strategic Programs on Environmental Endocrine Disruptors '98 (SPEED98), which are being conducted by the Japanese Ministry of the Environment. In June 2003 the Ministry formally concluded that DEHP had no detectable effect on mammals at the concentrations found in the environment.

Customer Relationships

The Kyowa Hakko Group uses customer satisfaction (CS) activities as part of its efforts to enhance management quality and provide products and services that satisfy customers.

Recognition of customer satisfaction as the first priority is a key management policy for the Kyowa Hakko Group. The Group uses a variety of activities to maximize customer satisfaction and strengthen its competitiveness. (See diagram on right.)

Kyowa Hakko in-house companies emphasize close communication with customers in their day-to-day business operations. This communication process includes the monitoring of customer needs through customer satisfaction surveys linked to the characteristics of each company's activities. Kyowa Hakko in-house companies also actively gather and promptly disseminate information that is likely to be useful to customers.

Customer Satisfaction Surveys

● Pharmaceuticals Company

The customer satisfaction activities of the Pharmaceuticals Company are based on the SMART Program (see Page 22 of this Report).

● Bio-Chemicals Company

In fiscal 2003 the Bio-Chemicals Company undertook a customer satisfaction survey using a questionnaire format. The questions covered 24 categories, including eight about quality, three about price, four about supply systems, five about information and services, three about relationships (communications) and one about general satisfaction. The results are shown in the graph on the right of this page.

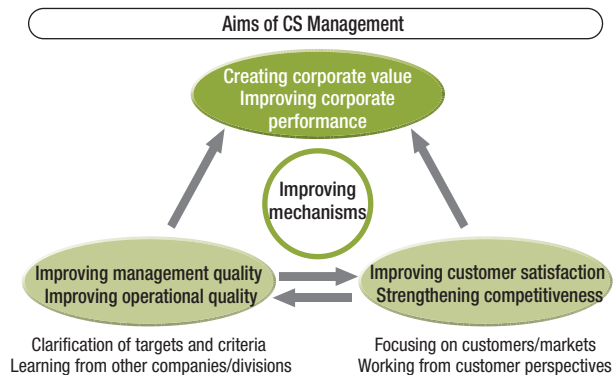
The Bio-Chemicals Company earned high scores in the questions relating to quality assurance and response to complaints, which are the most important issues for customers. However, the results for the questions on information and services indicated that improvement was needed in some areas, such as the introduction of new products and applications, and the provision of product information.

● Kyowa Hakko Chemical

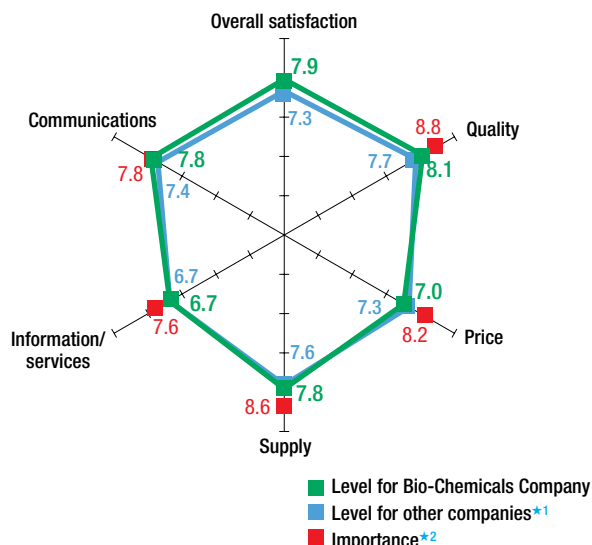
The results of a customer satisfaction survey indicated that customer relationships were good. Customer perceptions of quality management systems were also excellent. However, customers provided frank input about other aspects, including the need for better relationships in the area of technology, expectations about new products, and approaches to price negotiations.

● Food Company

Users of seasonings were very satisfied with the Food Company's quality management systems and response to customer needs. However, there is a need for improvement in relation to the provision of information. Users of bakery products rated the Food Company highly on the basis of its technical support and response to customer needs, but thought there was room for improvement in the scope of its product range.



■ Results of Customer Satisfaction Survey (Bio-Chemicals Company)



*1 The level for the highest-rated company among other companies with which survey participants deal
 *2 Importance (1-10)

Management Guideline and Points	Customers
<p>Management Guideline: We will provide products, services and information that are superior in terms of quality and functions in accordance with a policy of placing top priority on customer satisfaction.</p> <p>Points (Extract):</p> <ul style="list-style-type: none"> • 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. 	

Quality Assurance—Putting the Customer First

The Kyowa Hakko Group has established internal systems to ensure a prompt response to customer requests and complaints. It has introduced management systems, including ISO 9001 and GMP for pharmaceuticals, as well as quality assessment systems, as part of its continuing commitment to the provision of high-quality products and services.

The Management Guidelines established by the Kyowa Hakko Group include a declaration that Kyowa Hakko will “provide products, services and information that are superior in terms of quality and functions in accordance with a policy of placing top priority on customer satisfaction.” The Kyowa Hakko Group fulfills this commitment by implementing quality assurance practices designed to ensure customer confidence and satisfaction. Particular emphasis is placed on prompt action in response to customer requests and complaints. Complaints and other information are quickly fed back to all relevant organizational units and used to achieve further improvements in product safety and quality. The entire Kyowa Hakko Group is working together and in good faith to maximize customer satisfaction.

Responding to Requests and Complaints

The Kyowa Hakko Group strives to respond promptly to all complaints from customers and is constantly working to improve its performance indicators in this area, including the number of days required from the receipt of complaints to the completion of investigations and provision of responses, and customer satisfaction with responses. The number of days taken to respond to complaints is declining, and survey results are positive.

Providing Quality Information

The Pharmaceuticals Company, Bio-Chemicals Company and Food Company supply safe, high-quality products and raw materials in accordance with related laws and regulations, including the Pharmaceutical Affairs Law and the Food Sanitation Law. To ensure that customers can use Kyowa Hakko products with confidence, Kyowa Hakko in-house companies stringently check all information shown in product labels, including legally required information about materials used, “best before” dates, expiry dates and allergenic substances.

Kyowa Hakko Chemical specializes in the supply of high-grade, high-performance products to industrial users. It also promotes the provision of product safety information (see Pages 12, 25, 46 and 48).

Checking Systems (Quality Audits)

The Kyowa Hakko Group Quality Assurance Committee sets basic group policies and priority measures concerning quality assurance and monitors their implementation. Particular importance is placed on quality audits, including regular assessment of and guidance to suppliers of raw materials, products and commodities. Overseas suppliers are also subject to quality audits.

Quality audits include audits by the Quality Assurance Department of the Corporate Compliance Division and the

quality assurance departments of in-house companies, as well as internal audits at individual sites. The restructuring of in-house companies as independent companies has been accompanied by the reinforcement of audits carried out by in-house companies. There are also joint audits involving the Quality Assurance Department of the Corporate Compliance Division and the quality assurance departments of in-house companies.

Audit activities that involve the Quality Assurance Department of the Corporate Compliance Division are listed below. Audit results are reported to those in charge of the operations covered by audits, including site managers and affiliated company presidents, through the in-house companies’ quality assurance departments. The information is used to review and improve quality management systems. The Kyowa Hakko Group Quality Assurance Committee receives reports about quality audit results and other related information.

Quality Audits

Scope of audits	Plants of three principal companies, consolidated/non-consolidated subsidiaries
Audit items	Quality management audits (including effectiveness checks of systems) GMP audits, quality assurance activities, achievement of quality assurance objectives and targets, etc.
Frequency	Sites of three main companies: once a year Consolidated/non-consolidated subsidiaries: 1-2 times within 2 years Overseas subsidiaries: once in three years Affiliated companies: as required

Quality Audit Results (Summary)

Further promotion of production management and quality management
Reinforcement of response systems for problems and abnormalities
Reliable operation of change control systems



The quality management building at the Sakai Plant

Apology for the Recall of Bread-Crumb Products Manufactured by a Subsidiary

On December 12, 2003, a product recall was implemented after some bread-crumbs manufactured by Asahi Foods Products Co., Ltd., a consolidated subsidiary, were found to have been contaminated with filate copper wire. We apologize most sincerely to the many consumers who were severely inconvenienced by this problem.

To prevent recurrences, the company has increased the frequency of inspections and maintenance servicing for production facilities and installed a more sensitive metal detection system. It has also improved employee training and strengthened its Quality Assurance Department.

Working with Communities and Promoting Science

As part of its Responsible Care (RC) activities, the Kyowa Hakko Group maintains close communications with local communities and government agencies in the areas around its plants. It also supports science education for the young scientists of tomorrow.

Dialog with Communities

● RC Community Dialog in the Ube-Onoda District

(February 14, 2004)

The Japan Responsible Care Council organized a community consultation meeting in the Ube-Onoda District. Kyowa Hakko's Ube Plant supported this initiative from the planning stage, in cooperation with other chemical companies in the area.

The meeting was attended by around 50 people, including representatives of environmental non-governmental organizations, community groups and chemical companies in the surrounding area. There was a frank and open exchange of views about local environmental issues. The event was run by the environmental department of the municipal government, which provided excellent guidance and helped to maintain a cordial atmosphere and ensure a very meaningful session.

● RC Community Dialog in the Sakai-Senboku District

(March 4, 2004)

This was the fourth event of its type in the Sakai-Senboku District. Activities included a tour of Lion Corporation's Osaka Plant. The 2004 event was especially significant, since it was attended by 20 representatives of two community groups in the area around Kyowa Hakko's Sakai Plant.

Case studies were presented, including presentations about environmental, safety, security and accident prevention initiatives at Lion Corporation's Osaka Plant and Kyowa Hakko's Sakai Plant. There were many questions about topics ranging from air and water treatment methods to environmental monitoring. Participants reported that they had found the meeting a very informative opportunity to learn about the environmental and safety efforts of businesses. The meeting was attended by about 50 people, including local residents and representatives of local government, universities, businesses and member companies.



An RC Community Dialog meeting

International Cooperation

● Visit by Environment Protection Trainees from Weihai City, China (March 8, 2004)

Two trainees from the Chinese city of Weihai visited the Ube Plant to study environmental initiatives. The visit was jointly organized by Ube City, the China International Center of the Japan International Cooperation Agency (JICA), and the Ube International Environmental Cooperative Association to provide technical assistance in the field of environmental protection. The visitors were especially interested in the Ube Plant's wastewater treatment facilities.



Chinese trainees study wastewater treatment facilities.

● Environmental Support Activities (Kyowa Hakko Head Office)

The Japan Environmental Management Association for Industry (JEMAI) asked the Kyowa Hakko Group to cooperate in a program established by the Ministry of Economy, Trade and Industry to support government administration in ASEAN countries. In October 2003, it provided information about corporate industrial waste management systems to assist in the operation of the Thai government's industrial environmental manager system. In March 2004, similar assistance was provided to the Vietnamese government in relation to the administration of water quality management systems. In September 2004 the Kyowa Hakko Group will help to train international inspectors as part of international cooperation activities at the request of a United Nations agency.



Thai government trainees

Science Promotion Activities for the Young Scientists of Tomorrow

● Bio-Adventure Mobile Laboratory

The Bio-Adventure Mobile Laboratory program is now in its fifth year. Kyowa Hakko established the program as a way



of stimulating interest in science among elementary school children and junior and senior high school students. Volunteers from the Tokyo Research Laboratories visit schools to carry out experiments designed to investigate microorganisms and genetic mechanisms. In 2003 the Bio-Adventure Mobile Laboratory program helped participants at 11 educational institutions to appreciate the wonders of science.

● Spring Science Camp

Kyowa Hakko supported the Spring Science Camp program run by the Ministry of Education, Culture, Sports, Science and Technology. Fifteen high school students selected from throughout Japan were brought to Tokyo for three days of experience and training at the Tokyo Research Laboratories. The students carried out various experiments, including the sampling of monosodium glutamate crystals produced through fermentation, and used of electron and optical microscopes to observe microorganisms.

The participants took the activities very seriously and were excited to be able to carry out experiments using full-scale scientific equipment. The program provides excellent opportunities for young people who want to become scientists.

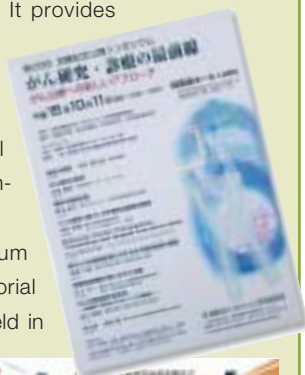


Science Camp

Kato Memorial Bioscience Foundation

Established in memory of Dr. Benzaburo Kato, the founder of Kyowa Hakko, this foundation supports innovative research in the basic field of bioscience. It provides research grants and implements a wide range of science promotion activities, including public symposia, international exchange, and grants for scientific conferences.

The 20th public symposium sponsored by the Kato Memorial Bioscience Foundation was held in the Keidanren Hall. The theme was “New Approaches to Cancer Therapy—The Latest Advances in Diagnosis and Treatment.”



Membership of the Nippon Keidanren 1% Club

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 also makes an extensive contribution to the advancement of science by supporting academic seminars through the Japan Pharmaceutical Manufacturers Association.

● Asahi Young Session

Kyowa Hakko was a co-sponsor of the 16th Asahi Young Session program held in November 2003. The primary sponsor for the program is The Asahi Shimbun Company (Japanese Newspaper). This year's guest speaker was Professor Ken Sakamura of the University of Tokyo. Professor Sakamura is the creator of the TRON operating system, which was originally developed in Japan. In his speech entitled “The Dream of TRON, a Dream for People,” he spoke to an audience of almost 800 about the history and future of computing and the concept of ubiquitous computing. He also offered a special message to young people considering a future in systems engineering.



● 6th Essay Competition on “Creating a Brighter Future in the 21st Century through Science”

Kyowa Hakko is a co-sponsor of this program, the main sponsor of which is the Mainichi Newspapers Co., Ltd. The aim is to provide junior and senior high school students with an opportunity to think about the role of science in their lives.



Competition poster

Results for 2003

- **Total number of entries: 4,534**
(3,286 from junior high school students, 1,248 from senior high school students)
- **Winners:**

Junior high school students	Most commended: 3
	Highly commended: 10
Senior high school students	Most commended: 1
	Highly commended: 10

Winners of the “most commended” awards participated in a 10-day study trip in the spring vacation. Among the places visited were the National Aeronautics and Space Administration (NASA) and the National Institutes of Health (NIH) in the United States.

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—both domestic and overseas—in which we operate.
- 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

The Kyowa Hakko Group has established a variety of systems to encourage employee upskilling and creativity and provide stimulating workplaces. In addition to labor-management communication systems, there are also systems to support employees' self-improvement efforts and an award system. To promote career development, there is also an internal job-posting program to facilitate inter-departmental transfers.

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 2003 to "360-degree feedback" from all managers, including directors. Feedback was sought from subordinates, colleagues and superiors 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.

Employee Training

In parallel with these corporate culture reform initiatives, Kyowa Hakko also devotes considerable effort to human resource development. As shown in the diagram below, employee training is broadly divided into rank-based training, senior management training, organizational culture reform, and support for employee upskilling. There are also numerous programs specific to individual business operations, including business 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. (See Kyowa Hakko Group Health, Safety, and the Environment/Sustainability Report 2002, Page 10^{*1}.) Kyowa Hakko also

	Rank-Based Training	Executive Management Training	Organizational Culture Reform	Support for Employee Upskilling
Management Executives	Management evaluator training	Training for senior managers Training for staff on outside assignments Management strategy training	360-degree feedback Workshops	
	Training for new managers Section Chief training Foreman training Employee training			Overseas study programs Distance learning programs English conversation programs TOEIC exam program
New Employees	Training for new employees			

publishes environmental newsletters and has established an ecology page in its group magazine to provide employees with timely access to information about the environment, safety and security.

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.

*1 <http://www.kyowa.co.jp/kankyoj/er2002j.pdf>
[ENGLISH = <http://www.kyowa.co.jp/eng/kankyoe/er2002.pdf>]

Management Guideline and Points	Employees
<p>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.</p> <p>Points (Extract):</p> <ul style="list-style-type: none"> • 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. 	

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. (See Kyowa Hakko Group Health, Safety, and the Environment/Sustainability Report 2002, Page 18*1.). 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. In addition to leave, additional support can be provided at the request of the employee concerned, including the arrangement of counseling and skill development through outplacement firms. In fiscal 2003 Kyowa Hakko implemented an early retirement incentive scheme for a limited period to assist employees who volunteered to move to alternative career paths.

Workplace Environment (Smoke-Free Zones)

Kyowa Hakko has established smoking rooms in each business unit and made all other areas smoke-free to protect non-smokers from passive smoking. To prevent smoke diffusion to other areas, smoking rooms are fitted with appropriate systems, including air cleaners and localized air extraction systems, according to capacity and other factors. Support is also available, primarily through the health insurance society, for employees who wish to stop smoking.

Employment of Workers with Disabilities

As of March 2004, people with disabilities made up 1.5% 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 three years through increased cooperation with public employment security offices and other organizations.

Erika Hashizume, Researcher, Healthcare Research Laboratories (on left in photograph)

I assess the functions of amino acids and other materials produced by Kyowa Hakko. Sometimes when tests yield surprising results I am reminded that life can be mysterious. Kyowa Hakko is known for its advanced technology. In addition to excellent materials, it also supplies information to the companies that use its products. I want to contribute to society through research leading to the creation of even better products and information.



Yuzhu Eccles, Kyowa Hakko Europe Bulk Logistics Team "Good logistics are half of the success."

Our Bulk Logistics Team considers their activities to be playing a key role in customer satisfaction as well as supporting our sales team in establishing good partnerships with customers. Our activities include answering various inquiries; importing our products from Japan, the U.S.A. and China; warehousing control; allocation; delivery management and after-sales service. As a small multinational team speaking six foreign languages, we contribute efficiently in connecting Kyowa Hakko with the pan-European customers. We enjoy a wide variety of tasks and have a lot of fun in learning constantly about our products and quality. The slogan in our daily business is: Be supportive, friendly, quick, economic and correct.

Yuzhu Eccles (center), Francisco Vallejo (left),
Laure Ganzhorn (right)



Yumi Ogino, Packaging Section, Production Division of Fuji Plant

I am responsible for packaging, which is the final process in the manufacture of pharmaceuticals. My work involves the operation of large machinery, including machines used to fill bottles with granular products and then package them separately. I am eager to gain knowledge that will be useful in my work, and in March of this year I qualified as a grade-2 machinery maintenance engineer. I will continue to absorb all kinds of knowledge so that I can help to produce even better products.



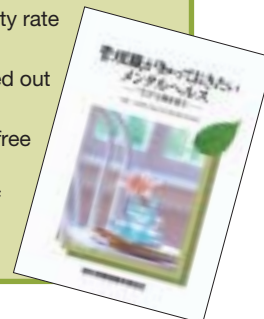
Maintenance activities



Preserving Safety and Health

The Kyowa Hakko Group is working to create pleasant, healthy workplaces by combining top-down management—with strong encouragement of suggestions from employees—with bottom-up initiatives, based on risk assessment.

- In fiscal 2003, the three principal Kyowa Hakko Group companies—Kyowa Hakko, Kyowa Hakko Chemical and Kyowa Medex—recorded an occupational injury frequency rate*1 of 0.15 and an accident severity rate*2 of 0.002.
- The entire Kyowa Hakko Group recorded an occupational injury frequency rate of 0.31 and an accident severity rate of 0.013 in fiscal 2003.
- An accident safety assessment method was established for synthesizing plants, and assessments were carried out for all production processes. This led to the installation of accident prevention systems.
- The Yokkaichi Plant of Kyowa Hakko Chemical Co., Ltd. continued to extend its industry record for accident-free hours worked (21.26 million hours as of December 31, 2003).
- The Kyowa Hakko Group is promoting physical and mental health through the improvement and expansion of related systems, such as medical checks.
- Kyowa Hakko has expanded traffic safety initiatives for its sales offices.



*1 The occupational injury frequency rate is the number of injuries with lost days per one million working hours.

*2 The accident severity rate is lost days per one thousand working hours.

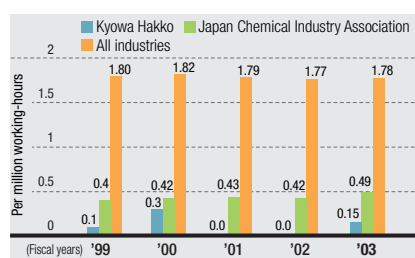
Occupational Safety

The Kyowa Hakko Group recognizes safety as the foundation stone for all of its business operations. This is reflected in the cooperative efforts of management and workers to maintain safety and health through the exhaustive implementation of safety-related policies, through the completion of environmental safety assessments when new business operations are launched or new facilities commissioned, and through the application of risk management methods to day-to-day operations. Safety standards are based on OSHMS standards. The aim is to make safety an intrinsic and inherent part of operations.

The graph below shows trends in occupational injury frequency rate of the three principal Kyowa Hakko Group companies in successive years. Although the rates are above zero, they are among the best in the chemical industry.

The Yokkaichi Plant has been accident-free for 26 years since 1977, and the total number of accident-free hours worked (21.26 million as of December 31, 2003) is a new record for the organic chemical industry. The plant continues to improve this record.

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



Accident Prevention Assessments

The Sakai Plant is located next to a residential area, and even a minor fire or explosion could cause serious inconvenience to local residents. To avoid such accidents, the Plant uses accident prevention assessment guidelines developed for petrochemical complexes. Production processes at the Plant were assessed using procedures based on safety assessment methods designed for each specific process. Accident prevention systems that were found to be inadequate as a result of this assessment are being systematically upgraded.

Safety Awards and Penalties

The following table lists awards and other actions relating to safety, hygiene and security since 2003.

■ Principal Safety Awards and Penalties since 2003

2003	Certificate awarded by the Japan Industrial Safety and Health Association (JISHA) in recognition of a new accident-free record for the organic chemical industry (21.26 million hours)	Yokkaichi Plant
	Minister of Health, Labour and Welfare safety award to foreman	Hofu Plant
	Minister of Economy, Trade and Industry award for high-pressure gas safety	Hofu Plant
	Withdrawal of approved safety inspector certification under the High-Pressure Gas Safety Law (See Page 49.)	Yokkaichi Plant, Chiba Plant
2004	1st class award for safety management of boilers, etc.	Hofu Plant

Occupational Health

The Kyowa Hakko Group works to prevent illness by providing legally mandated health checks and encouraging all employees over 30 years of age to have medical examinations, including medical checkups and clinical blood tests, as well as checks for gastric problems, intestinal cancer and other conditions. It also promotes physical and mental well-being by providing counseling services, access to sports clubs and health training programs.

(Fiscal years)	1999	2000	2001	2002	2003
Employees Undergoing Thorough Medical Checks	780	750	704	760	764

Traffic Safety

Kyowa Hakko has 1,119 vehicles (as of March 2004) for use in sales activities. In accordance with group policy, each site formulates a traffic safety plan and undertakes related activities. The table below traces trends in the number of accidents resulting from negligence (accidents that were wholly or partially attributable to negligence by a Kyowa Hakko employee). There was a 63% increase in fiscal 2003. Reasons for this result include an increase in the number of skid-related accidents on snow-covered roads. Senior managers at sites are leading renewed initiatives to prevent accidents.

From an environmental perspective, Kyowa Hakko has replaced 686 vehicles, or 61% of its total sales fleet, with certified low-emission vehicles. The entire fleet will be low-emission by 2010.

(Fiscal years)	1999	2000	2001	2002	2003
Accidents Caused by Negligence	113	118	124	102	166



Environmental Performance

The Kyowa Hakko Group recognizes the potential of its business activities to have a significant impact on the environment. For this reason, the Group places a high priority on efforts to minimize energy consumption, reduce emissions to zero and manage chemical substances appropriately. Fiscal 2003 brought major progress toward the achievement of environmental goals in each of these areas. The environmental protection activities of the Kyowa Hakko Group are firmly on track and about to accelerate.

Group-Wide Environmental Protection Activities

The Kyowa Hakko Group has identified the reduction of energy consumption, the achievement of zero-emission status, and the management of chemical substances as its three priority areas for the solution of environmental problems. These areas were selected because of their potential for significant environmental impacts. In fiscal 2003, there was major progress toward the achievement of common group targets in all three areas.

Group-Wide Environmental Protection Activities

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

Questionnaire Item	Achievement Level	
	FY2001	FY2003
Environmental management	(%)	(%)
Establishment of environmental protection policies	79	83
ISO 14001 accreditation	43	70
Obtaining and complying with environmental safety laws	99	86
Environmental performance		
Restrictions on use of toxic chemicals	62	99
Environmental load reduction activities	70	81
Environment-considerate packaging materials	69	87
Number of responses	118*	114

*Responses from suppliers to the liquor operations (no longer part of the Kyowa Hakko Group) are excluded.

In fiscal 2003, the Kyowa Hakko Group again implemented a green procurement survey of its suppliers. The survey results generally showed an improvement, compared with fiscal 2001. Approximately 80% of suppliers have introduced environmental management, and their environmental performance scores are close to 90%. The Kyowa Hakko Group will need to provide continuing cooperation for environmental initiatives. The percentage of suppliers that restrict the use of toxic chemicals has reached 99%. These efforts are important from a product safety perspective, and the Kyowa Hakko Group will continue to work with suppliers until a score of 100% is achieved.

Kyowa Eco-Project (KEP)

KEP Targets

- CO₂ 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 Eco-Project (KEP) activities, which are based on shared group-wide targets, are the core of the Kyowa Hakko Group's efforts to prevent global warming and reduce waste. On June 4, 2004, a group meeting was held to present reports on the results of KEP initiatives at plants and research facilities.



Data Entry Screen

Participants enthusiastically shared ideas and exchanged opinions on various aspects of the project, including the approaches at the three plants that have achieved zero-emission status, innovative energy-saving measures, and the reduction of energy consumption at research facilities.



Group meeting

Green Office Plan (GOP)

GOP Targets for Fiscal 2003

- Reduction of electricity consumption by at least 1% per annum
- Promotion of green purchasing
- Reduction of copy paper use by at least 5% per annum

The Green Office Plan (GOP) targets the administrative operations of the Kyowa Hakko Group. The aims are to reduce energy consumption and the use of copy paper, and to promote green purchasing.

In fiscal 2003, the consumption of electricity by sales offices was reduced by 2.2%, compared with a target of 1%. The amount of copy paper used in Kyowa Hakko

Group facilities, including production sites and research facilities, was reduced by 3.5%.

The reduction fell short of the 5% target, mainly because of increased production of sales-related documentation. Green purchasing, including the purchase of environment-supportive products, such as Eco Mark office products and copy paper, accounted for 56% of total purchases.



The Chiba plant GOP team

Material Balances by Individual Kyowa Hakko Business Operations

Material balances and environmental accounting of the production plants of the three main Kyowa Hakko Group companies—Kyowa Hakko, Kyowa Hakko Chemical, and Kyowa Medex—are summarized here on a business-operation.

Resource Efficiency Ratios

The chart below shows resource efficiency, fuel efficiency, packaging material efficiency and fresh water resource efficiency ratios for the Kyowa Hakko Group's in-house Pharmaceuticals Company including Kyowa Medex, Bio-Chemicals Company, Food Company, as well as Kyowa Hakko Chemical. Overall, the ratios show little change from the previous year, and they continue to reflect business characteristics. The resource and fuel efficiency ratios for the Pharmaceuticals Company were excellent, while those for the Bio-Chemicals and Food companies were close to the group averages. In Kyowa Hakko Chemical,

the resource and fuel efficiency ratios per unit of weight were good. There was some deterioration in fresh water resource efficiency ratios, and it will be necessary to strengthen conservation and recycling measures.

Unit Emission Levels

Unit emission levels showed major improvements in unit final disposal at landfills and unit water pollution emissions. These results reflect the success of the Kyowa Eco-Project and efforts to reduce water contamination.

Resource Efficiency

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

		Pharmaceuticals	Bio-Chemicals	Kyowa Hakko Chemical	Food	Kyowa Hakko
Resource Efficiency*1	tons/¥100 million sales	1.9 →	300 ○	1,100 →	240 →	360 →
	tons/tons of production	2.6 ○	1.8 →	0.53 →	0.93 →	0.61 →
Fuel Efficiency*2	kℓ/¥100 million sales	18 →	230 →	340 →	58 →	140 →
	kℓ/tons of production	24 ○	1.4 →	0.17 →	0.23 ○	0.24 →
Packaging Materials Efficiency	tons/¥100 million sales	1.0 →	3.1 ○	2.9 →	9.7 →	2.4 →
	tons/tons of production	1.4 ○	0.019 →	0.001 →	0.038 →	0.004 →
Fresh Water Resource Efficiency	1,000kℓ/¥100 million sales	3.6 →	125 →	12 ×	26 ×	27 →
	1,000kℓ/tons of production	4,900 ○	760 ×	5.9 ×	100 ×	59 ×

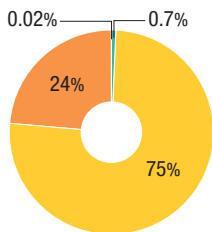
Unit Emissions

		Pharmaceuticals	Bio-Chemicals	Kyowa Hakko Chemical	Food	Kyowa Hakko
Unit CO ₂ Emissions	tons/¥100 million sales	36 →	620 →	730 →	140 →	320 →
Unit Final Disposal	tons/¥100 million sales	0.017 ○	1.4 ○	0.22 ○	0.009 ○	0.30 ○
Unit Water Pollution Emissions*3	tons/¥100 million sales	0.03 →	2.7 ○	0.27 ○	0.30 ○	0.54 ○
Unit Air Pollution Emissions*4	tons/¥100 million sales	0.04 →	3.7 ○	0.57 →	0.71 ○	0.81 ○

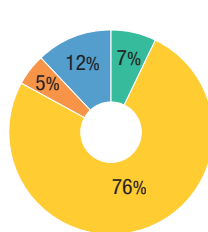
*1 Index of total usage of agricultural and petrochemical raw materials
 *2 Index of crude oil conversion to express energy usage in kℓ

*3 Index of total COD, N and P levels
 *4 Index of total SO_x, NO_x and dust emissions

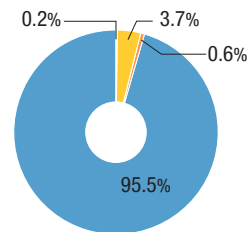
Raw Material Utilization Ratios



Biological raw materials

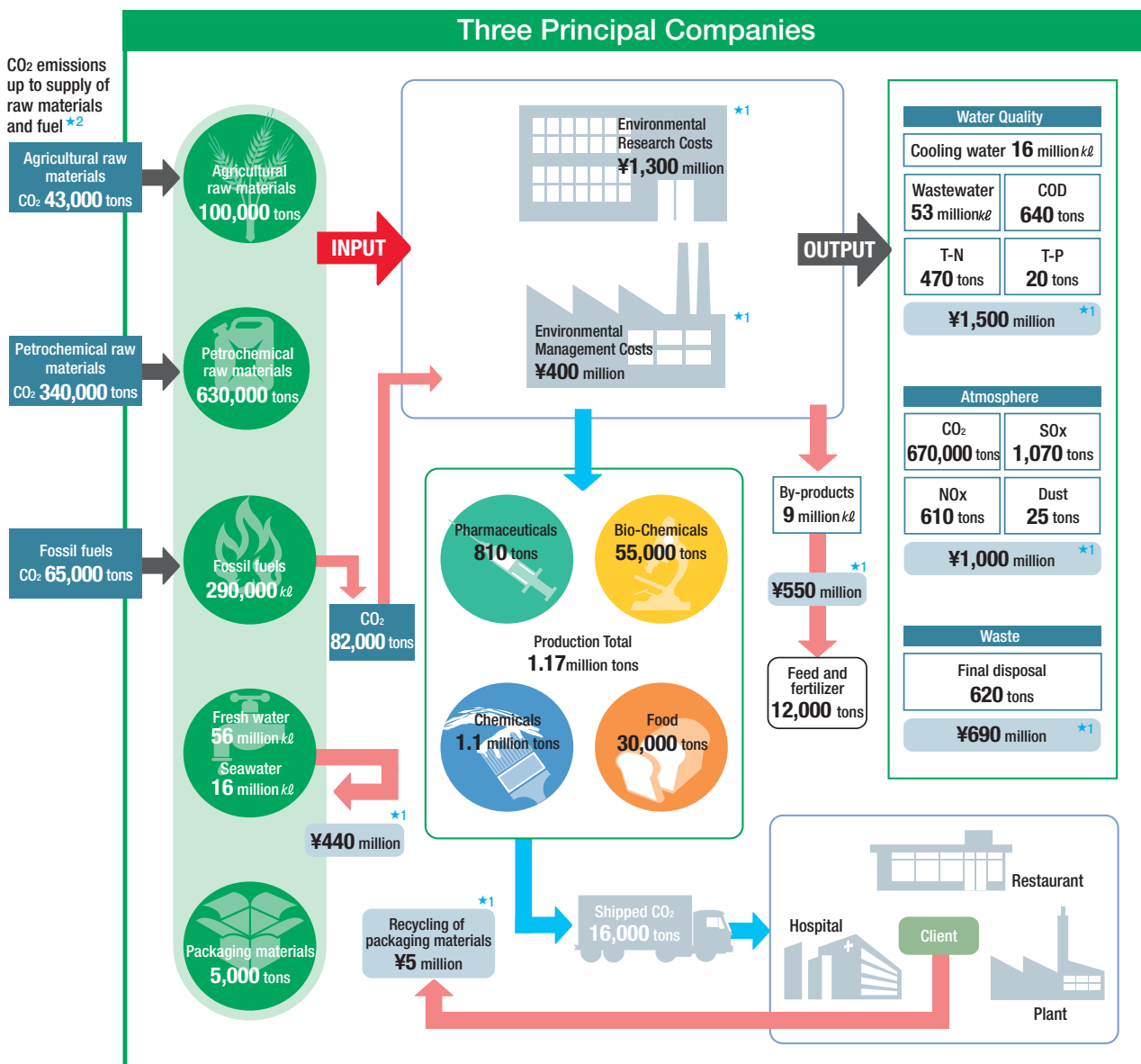


Fresh-water resources



Petrochemical raw materials

Material Balances by Individual Kyowa Hakko Business Operations

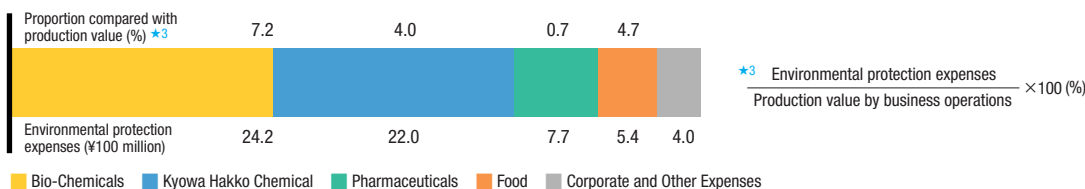


*1 The figures shown here were extracted from the environmental accounts.

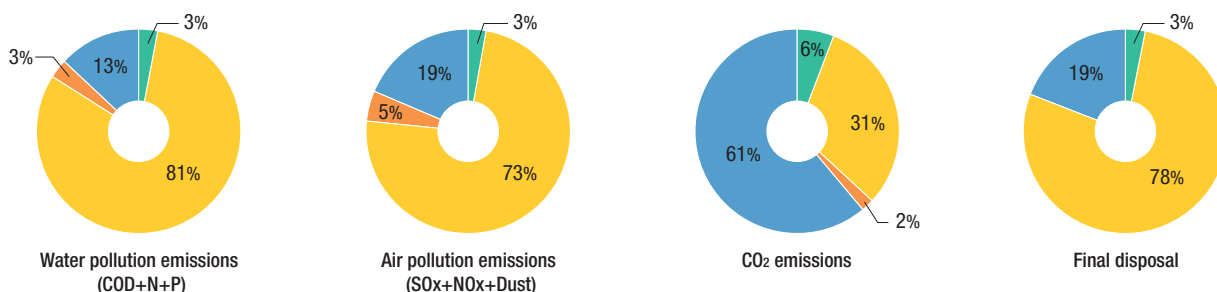
*2 LCA Experimental Open Data Base (October 2003), Japan Environmental Management Association for Industry
Introduction to LCA—Environment Load of 4,000 Social Stocks (Environmental Management Association for Industry, 1998)

Segment Environmental Protection Costs

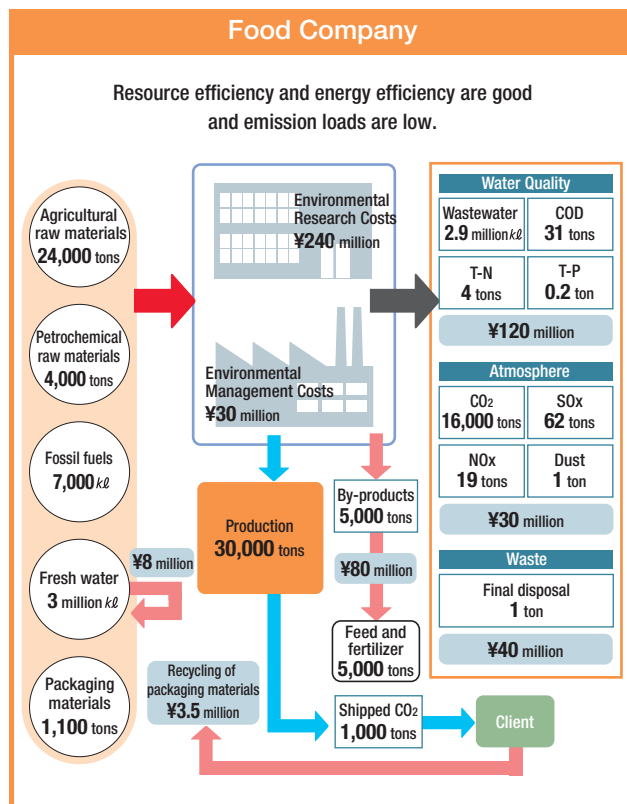
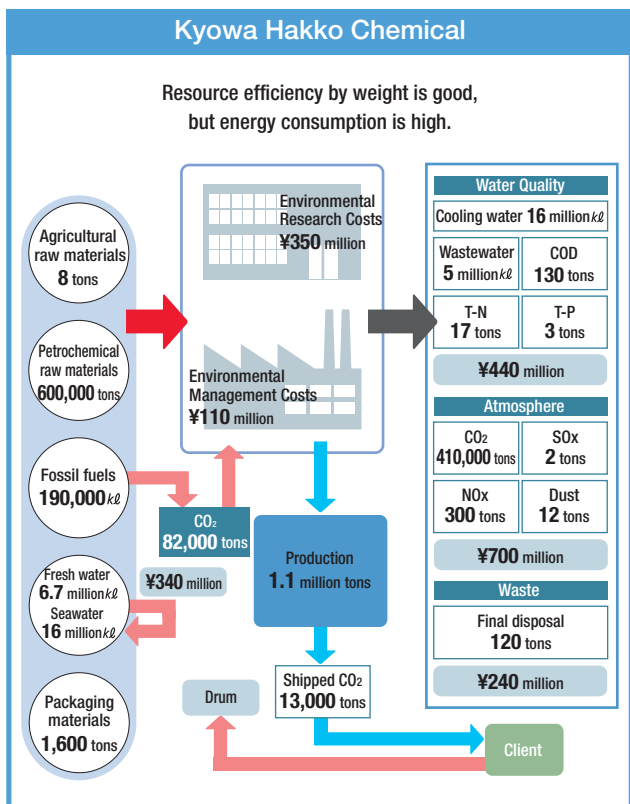
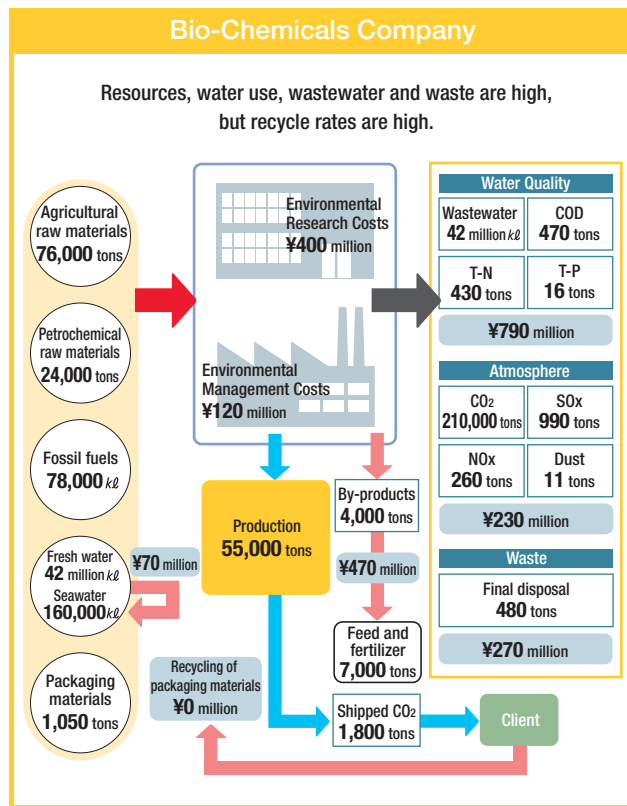
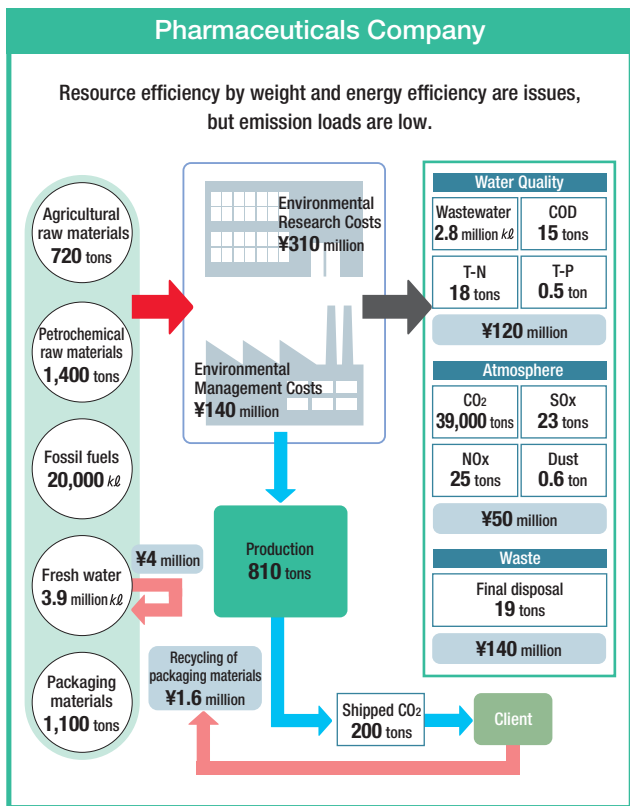
The Bio-Chemicals Company and Kyowa Hakko Chemical account for 73% of total environmental protection costs. Environment-related cost items in the Bio-Chemicals Company include wastewater treatment and by-product recycling required for the production of bulk fermentation products. The large-scale petrochemical 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 CO₂. Compared with these activities, the environmental load caused by the Pharmaceuticals and Food companies is minimal, and environmental protection costs are low.



Emission Load Ratios



Material Balances



Environmental Accounting

The Kyowa Hakko Group uses environmental accounting to ensure appropriate management.

The total cost is falling, reflecting business restructuring measures.

In fiscal 2003, environmental accounts were prepared for the domestic plants and research facilities of the three principal companies and the five consolidated subsidiaries with production operations, based on the Japanese Ministry of the Environment's the 2002 Environment Accounting Guidelines. The accounts measured progress toward the efficiency targets set for the Kyowa Eco-Project.

Improvements to production processes and wastewater treatment facilities totaled approximately ¥300 million. Emission loads, including COD and nitrogen were reduced.

Total expenses were ¥6,300 million. On-site operating costs fell 13% year-on-year, through reductions in the operating costs of environmental protection (wastewater treatment) facilities, and the efforts to lower energy consumption at major plants. Total expenses were 12% below the previous year's level.

Environmental Protection Costs (¥ million)					
Classification	Principal Activities	FY2002		FY2003	
		Investment (¥ million)	Expense (¥ million)	Investment (¥ million)	Expense ^{★1} (¥ million)
(1) In-Situ Operating Costs		1,182	5,095	289	4,430
Breakdown	(1)-1 Pollution Control Costs				
	[Investment] Installation of COD and nitrogen emission reduction facilities, etc.	263	1,690	134	1,568
	[Expense] Improvement and operation/maintenance of wastewater treatment facilities				
	[Investment] Establishment of Incinerator dust collectors, introduction of low-pollution vehicles	130	571	37	521
	[Expense] Operation/maintenance of flue gas desulfurization, denitration, exhaust gas facilities Pollution load levy, etc.				
	(1)-2 Global Environmental Protection Costs				
	[Investment] Installation of gas air conditioning facilities and maintenance of gas turbine facilities, and measures for prevention of CFC leakage from dryers	282	500	46	495
	[Expense] Purchase and use of CO ₂ as raw material for oxo process (Kyowa Hakko Chemical) Maintenance for refrigerating machine and air conditioner				
	(1)-3 Resource Recycling Costs				
	[Investment] Engineering work on waste recycling facilities and flue gas coolers	507	2,334	72	1,846
	[Expense] Maintenance and management of water conservation facilities and waste recycling and disposal facilities, demolition of decommissioned incinerator, outside recycling and contracted disposal of waste				
(2) Upstream and Downstream Costs	[Expense] Promotion of green purchasing of office supplies ^{★2} Promotion of reduction of environmental impact of packaging material, etc. Refurbishment contract charges under the Packaging Materials Recycling Law	0	12	0	35
(3) Environmental Activities Costs	[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	35	585	23	561
(4) R&D Costs	[Expense] R&D of environment-friendly products R&D aimed at controlling environmental impact at the production stage	1	1,453	0	1,291
(5) Community Activities Costs	[Expense] Membership in and cooperation with environmental protection and nature conservation activities	0	15	0	13
(6) Environmental Damage Related Costs	[Expense] Oil pollution liability insurance	0	1	0	1
Total		1,218	7,161	312	6,331

Item	Activities	Amount (¥ million)	
		FY2002	FY2003
Total Investment	Expansion and improvement of pharmaceuticals manufacturing buildings at pharmaceutical plants	9,488	8,652
Total R&D Costs	R&D of new products and technologies	31,608	29,316
Sales of Items Related to Resource Recycling as in (1)-3	Fertilizer containing organic materials, used catalysts, used packaging materials for recycling	492	447
Effect Related to Saving Resources as in (1)-2 and 3	Conservation of energy, water and resources and waste reduction	1,270	1,511

★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.

Significant Effects

- Wastewater recycling made possible by improvements in production processes at major plants, and the improvement of wastewater treatment facilities reduced COD emissions by 39% year-on-year. Nitrogen and phosphorus emissions were reduced by 16% and 11% respectively year-on-year.
- Ongoing energy conservation and waste reduction initiatives under the Kyowa Eco-Project resulted in benefits that included improvements in processes and facilities, and increased recycling of waste.
- Energy conservation initiatives reduced unit energy consumption by 3.7% year-on-year. Final disposal at landfills was cut by a massive 50% year-on-year through effective resource utilization.
- Resource savings valued at approximately ¥2,000 million were achieved through sales of fertilizers containing organic materials, sales of recovered resources, energy conservation, waste reduction, resource conservation and water conservation. Kyowa Eco-Project initiatives accounted for savings of ¥662 million (resource savings: ¥350 million, energy savings: ¥304 million, waste: ¥8 million). Savings achieved through water recycling were valued at ¥849 million.
- Kyowa Hakko Chemical used 82,000 tons of CO₂ as the raw material for the oxo process. The resulting recovery of CO₂ corresponded to 20% of CO₂ emissions.

Improvement ○ Moderate improvement ○ About the same △ Moderate deterioration ×

Effect				Criteria
Focus	FY2003	Comparison with FY2002	Remarks (Future Measures)	Self-Imposed Control Standard in FY2003
Water pollution control				
• Total volume of wastewater	52.4 million tons	0.7 million tons decrease △	Similar to previous year's level (continuing rationalization of water use)	—
• COD levels	651 tons	413 tons decrease ○	Substantial (39% year-on-year) improvement resulting from wastewater recycling made possible by improvements in technology for wastewater treatment facilities and production process enhancements; 3,990 tons of COD removed	1,365 tons
• Nitrogen levels	471 tons	93 tons decrease ○	16% year-on-year reduction through the above improvements	1,025 tons
• Phosphorous levels	20.5 tons	2.6 tons decrease ○	11% year-on-year reduction through the above improvements	48 tons
Air pollution control				
• SO _x emissions	1,072 tons	157 tons decrease ○	13% year-on-year reduction; continuing use of low-sulfur fuel (comprehensive measures under consideration)	2,595 tons
• NO _x emissions	609 tons	55 tons decrease ○	8% year-on-year reduction	803 tons
• Dust emissions	25 tons	4 tons decrease ○	14% year-on-year reduction	340 tons
Unit energy consumption (crude oil conversion)				
• Kyowa Hakko, Kyowa Medex, plus 5 other companies	69.2kl/¥100 million of production	6.3kl/¥100 million of production improvement ○	3.7% year-on-year improvement in unit energy consumption through energy conservation activities	Improvement of energy consumption per unit by at least 1% per annum
• Kyowa Hakko Chemical	166 l/tons production	4 l/tons production improvement ○	Energy savings totaling 11,600kl achieved by Kyowa Hakko, Kyowa Medex and five other companies, and Kyowa Hakko Chemical	
CO₂ use (Kyowa Hakko Chemical)	82,000 tons	4,000 tons decrease △	Recycled through oxo process as raw material for oxo alcohol production	
Waste				
• Waste materials	158,000 tons	35,000 tons decrease ○	Target of 50% reduction from 1998 level to be achieved in fiscal 2004 (waste output reduced through process improvements, improved recycling)	(50% reduction relative to 1998 level by 2004)
• Waste disposal at landfill sites	708 tons	700 tons decrease ○	50% year-on-year reduction, zero-emission ratio: 88% (continuing promotion of recycling)	(Zero emissions by 2007 — Target: 250 tons)
<ul style="list-style-type: none"> • The Administrative area initiatives under the Green Office Plan include green purchasing of copy paper and office supplies. • The Pharmaceuticals Company has listed office supplies eligible for green purchasing under its central bulk purchasing system for consumables. This information is being used for green purchasing activities. • The Food Company has reduced the amount of packaging materials used by switching to pillow bags for back-in-box packaging. The percentage of all-fiber drums used has been improved. • ISO 14001 environment management systems have been implemented at the production sites of the three main group companies (already accredited) and at two research facilities. Other subsidiaries and affiliated companies are introducing systems. • The fifth edition of the Health, Safety, and the Environment/Sustainability Report was published (Japanese: 5,000 copies, English: 3,000 copies), and site reports for the three main Kyowa Hakko Group companies were placed on the website. • The Kyowa Hakko Group has continued to implement environmental countermeasures, including protection of the natural environment, tree planting, beautification, and preservation of scenic values. • The Kyowa Hakko Group has continued to supply environment-supportive products, including chemical products based on consideration for the environment through the use of bio-technology or chemical product development. • Resource consumption, waste and environmental impacts have been reduced by research and development relating to improvements to production processes, effective use of by-products, and wastewater treatment technology. • The Kyowa Hakko Group supports the World Wide Fund for Nature Japan and participates in the activities of various organizations, including the Nippon Keidanren and the Japan Responsible Care Council. • The Kyowa Hakko Group participates in and supports local activities and river clean-up projects in areas around its plants. 				

Scope of Summary: Kyowa Hakko (Tsuchiura Plant, Fuji Plant, Sakai Plant, Yokkaichi (Pharmaceuticals) Plant, Hofu Plant, Ube Plant, Tokyo Research Laboratories, Healthcare Research Laboratories), Kyowa Hakko Chemical (Chiba Plant, Yokkaichi Plant), Kyowa Medex (Fuji Plant), Ohland Foods Co., Ltd., Riken Kagaku Co., Ltd., Asahi Foods Products Co., Ltd., Kyowa F. D. Foods Co., Ltd., Kyowa Hifoods Co., Ltd.

Period Covered: Fiscal 2002 (April 1, 2002–March 31, 2003)
Fiscal 2003 (April 1, 2003–March 31, 2004)

Global Warming Prevention Initiatives

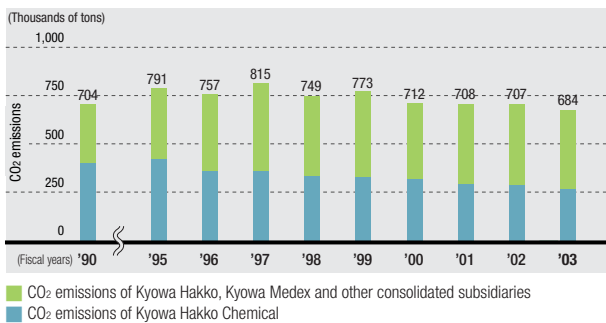
The Kyowa Hakko Group is continually working to reduce greenhouse gas emissions by using the Kyowa Eco-Project to develop ideas for energy efficiency improvements at all stages from production and research to distribution.

- In fiscal 2003, activities under the Kyowa Eco-Project resulted in energy savings worth ¥300 million and resource savings worth ¥350 million. There was a 3.7% year-on-year improvement in unit energy consumption.
- CO₂ emissions were reduced by 684,000 tons, or 3.3%, year-on-year in fiscal 2003, to 97.2% of the 1990 level.
- Energy consumption in fiscal 2003 was equivalent to 302,000kl of crude oil, a year-on-year reduction of 6.6%.
- The Kyowa Hakko Group participated in a pilot scheme established by the Ministry of the Environment to trade greenhouse gas emissions. Emission levels were checked at the Hofu and Yokkaichi plants, which account for about 75% of total emissions by the Kyowa Hakko Group.
- Distribution-related energy consumption has been reduced steadily over the past three years. Consumption in fiscal 2003 was 4.6% below the 2000 level.

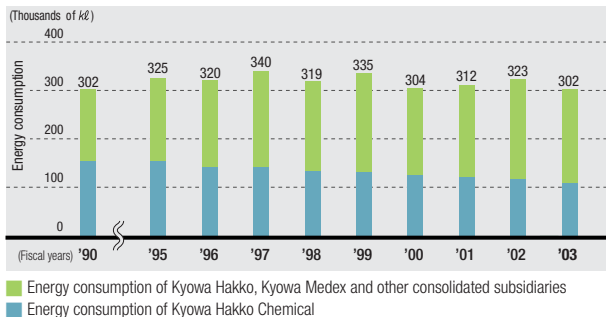
In fiscal 2003, the value of production by the Kyowa Hakko Group showed a marginal increase of about 2%. However, efficient energy management, achieved mainly through the Kyowa Eco-Project, resulted in substantial reductions in the amount of energy consumed and the amount of CO₂ emitted. The main reasons for these improvements were improved power generation efficiency and boiler energy efficiency.

Fiscal 2003 CO₂ emissions of the Kyowa Hakko Group were reduced by 23,000 tons year-on-year to 684,000 tons. The reduction reflects improved energy efficiency at the Hofu and Yokkaichi plants, which are the Group's main production facilities.

CO₂ Emissions



Energy Consumption (Crude-oil equivalent)



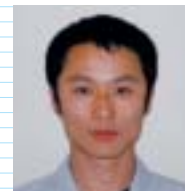
Distribution-Related Global Warming Initiatives

CO₂ emissions from distribution operations amount to a little over 2% of the total for production and research operations. Chemical products are transported using Japan's first electrically propelled chemical tanker (Eco-tanker), the Sensho. In fiscal 2003, the Kyowa Hakko Group used the Eco-tanker to transport approximately 60,000 tons of products. The amount of CO₂ emitted during transportation is reduced by about 7% (121 tons per year) compared with conventional shipping. There was also a pleasing 47% reduction in emissions of nitrous oxide, which is also an atmospheric pollutant. Other measures that have reduced CO₂ emissions include a shift from truck to rail transportation, and the use of large ISO containers. It is estimated that CO₂ emissions have been reduced by 4.6%, or 735 tons per year.



Yasunari Tokuyama, Yokkaichi plant Kyowa Hakko Chemical

Sometimes energy conservation efforts conflict with other risk factors, such as unit raw material consumption or quality. If we can understand, quantify and verify these risks properly, we can discover ways to eliminate them. We have achieved savings of almost ¥300 million



through efforts involving the entire plant organization, including the plant manager. Over the past year there has been considerable improvement in awareness of the fact that even a small energy saving is significant, and that we should never fear failure. If we can maintain this commitment, I believe that we can continue to achieve good results.

Preventing Air and Water Pollution

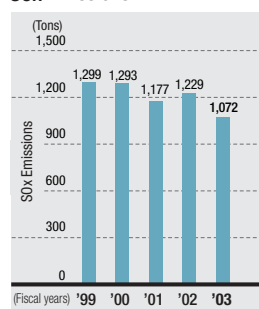
The Kyowa Hakko Group is working to prevent air and water pollution by using energy efficiently, by improving the efficiency of wastewater treatment, and by improving production processes that generate waste. Efforts in these and other areas have yielded significant progress.

- Atmospheric emissions of SOx, NOx and dust have been reduced by 13%, 8% and 14% respectively year-on-year. The Kyowa Hakko Group aims to achieve a dramatic reduction in SOx emissions through a fuel conversion plan targeting fuel oil boilers.

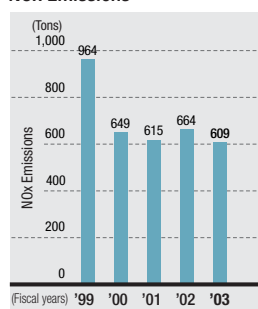
- Emissions of COD, nitrogen and phosphorus into bodies of water have been reduced by 39%, 16% and 11% respectively year-on-year. These substantial reductions are the result of determined efforts to improve wastewater treatment technology and recycle liquid waste.

Although plant operating rates remained high in fiscal 2003, the Kyowa Hakko Group used various measures to prevent atmospheric pollution, including improvements in the efficiency of energy utilization, and the adjustment of boiler combustion temperatures. COD, nitrogen and phosphorus emissions from production processes were further reduced. Measures in this area included efforts to ensure reliable removal rates in wastewater treatment facilities, and the promotion of energy conservation with collaboration from the Technical Research Laboratories at the Hofu Plant.

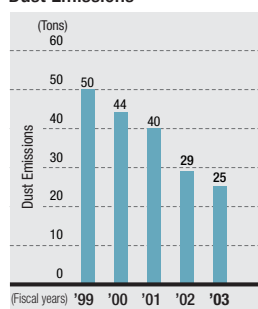
SOx Emissions



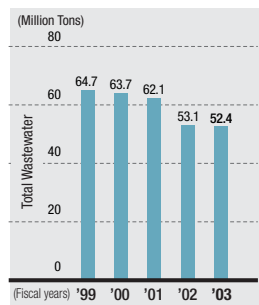
NOx Emissions



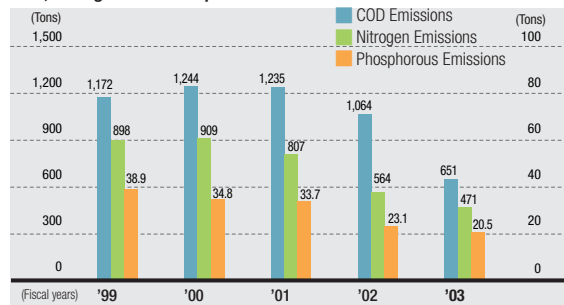
Dust Emissions



Trends in Total Wastewater Emissions




COD, Nitrogen and Phosphorous Emissions




Hirokazu Imi, Hofu Plant, Kyowa Hakko

At the Hofu Plant we have classified wastewater produced by each department into high-COD wastewater and low-COD wastewater. Both are treated using biological processes to remove nitrogen and phosphorus, as well as undergoing standard activated sludge treatment. Recent changes in production items have caused a relative increase in the ammonia load, which has made nitrogen treatment more difficult. Another complicating factor is substantial load fluctuation. However, the wastewater treatment team works hard to achieve reliable removal of nitrogen by fine-tuning treatment conditions, including the nitrification pH and air flow. In addition to the existing restrictions on concentrations, restrictions on total emissions were introduced in April 2004. We have installed automatic nitrogen and phosphorus analyzers to allow production activities to continue smoothly as we work to comply with the requirements.



Hiromasa Hidaka, Hofu Plant, Kyowa Hakko

I work in the Technical Research Laboratories at the Hofu Plant. We carry out research about environmental countermeasures for the entire Kyowa Hakko Group. Our recent activities include the installation of highly efficient air supply and oxygenation systems in aeration tanks at the Hofu, Yokkaichi and Fuji plants to reduce COD, nitrogen and phosphorus emissions and save energy. Our efforts at the Hofu Plant are not limited to wastewater treatment, and we also study the manufacturing processes that produce wastewater. We have achieved some significant process improvements, including the reduction of nitrogen emissions through the reuse of wastewater with a high ammonia content, and the reduction of phosphorus emissions through a dramatic reduction in the amount of phosphorus in production operations. We will continue to contribute to the solution of environmental problems for the entire Kyowa Hakko Group, including overseas plants.



Working toward Zero Emissions

The entire Kyowa Hakko Group is working toward the achievement of zero emissions^{★1} by fiscal 2007. Projects have been established, and a variety of measures are being implemented to reduce the amount of waste materials, increase recycling and reduce final disposal at landfills.

- In fiscal 2003, the Kyowa Hakko Group produced 158,000 tons of waste materials. However, final disposal at landfills was reduced from 1,408 tons in fiscal 2002 to 708 tons in fiscal 2003. The goal of 250 tons is now close, and the achievement of zero emission status is in sight.
- The Hofu and Fuji plants both maintained their zero emission status, and the Tsuchiura Plant reached the zero emission level in fiscal 2003. Kyowa Medex reduced to zero in the second half of the fiscal year.

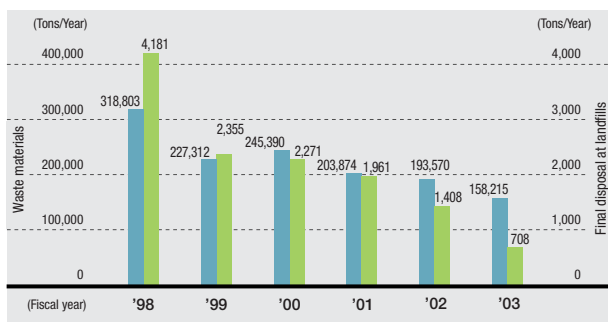
In fiscal 2003, the amount of waste materials was reduced by 18% year-on-year to 158,000 tons. The graph below provides a breakdown of waste materials at key sites. Fermentation mother liquor, waste acids and waste alkalines, for which recycling methods have been established, make up about 90% of total waste materials. The challenge now is to develop recycling methods for the remaining 10%.

Fiscal 2003 was identified in plans as the final year of preparations, including detailed studies about recycling methods at all sites, for the achievement of zero emission status. Individual plants are not limited to their own knowledge and skill resources, since there are opportunities for knowledge sharing through various forums, such as meeting held to present Kyowa Eco-Project results. Concepts used at plants that are further ahead in the zero emission initiative have been applied widely throughout the Group. In fiscal 2003 this resulted in the reduction of final disposal at landfills by 50% year-on-year to 708 tons.

Toward Zero Emission Status

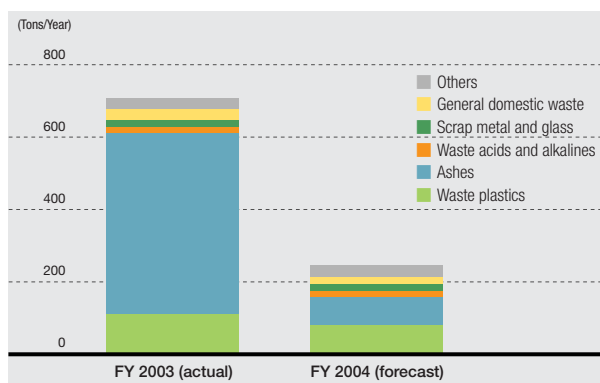
At the Eco-Project meeting in 2004, each site presented detailed analyses of waste disposal at landfills. There was also discussion of approaches to the achievement of zero emission status. In fiscal 2003 final disposal at landfills by the Kyowa Hakko Group amounted to 708 tons. This total includes over 500 tons of ash, which made up 70% of the total. A recycling method established in the second half of fiscal 2003 allowed the entire output of ash to be recycled as a raw material for cement production. Reports from various sites indicated that improved sorting of waste plastic allowed thermal recycling, and that further reductions in final disposal at landfills can be achieved through improved sorting of general waste. Figures from these reports are shown in the projections for fiscal 2004. It is anticipated that zero emission status, defined as the reduction of final disposal at landfills to below 250 tons, will be achieved in fiscal 2004.

Trends in Waste Materials and Final Disposal at Landfills

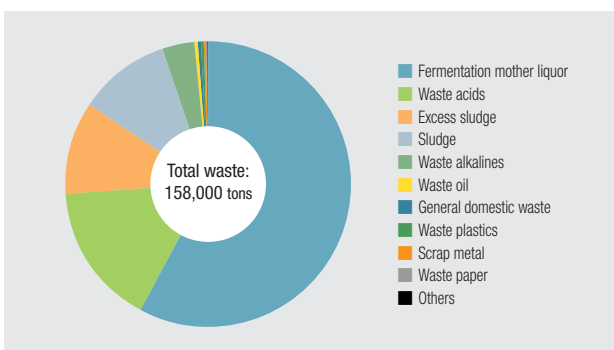


Scope of Summary: Kyowa Hakko and Kyowa Hakko Chemical, Kyowa Medex, Riken Kagaku, Kyowa F.D. Foods, Kyowa Hifoods, Ohland Foods, Asahi Foods Products

Trends in Final Disposal at Landfills



Waste Materials by Type of Substance



★1 The term "zero emissions" implies the reduction of waste products to zero. However, in addition to the recycling approach, the Kyowa Hakko Group must also deal with substances that require appropriate disposal through incineration. Its 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 of 250,000 tons of waste materials in fiscal 2000, or 250 tons.

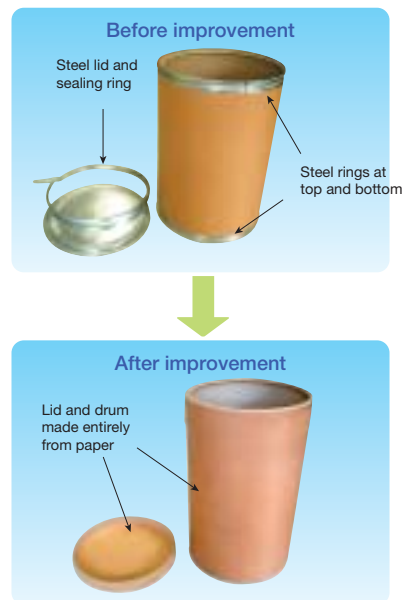
Packaging Materials

The use of environment-friendly packaging materials is vital to the achievement of zero emission status. Conventional fiber drums with steel bands have sufficient strength, but the only disposal method that can be used is incineration. This has been a major challenge from the viewpoint of achieving zero emission status. For example, the Hofu Plant uses around 130,000 fiber drums (approximately 450 tons) to purchase raw materials or ship products. Kyowa Hakko has been working with suppliers since 1996 to develop and introduce all-fiber drums with no metal content. In fiscal 2003 these drums were used for all shipments from plants and 88% of all raw materials received at plants. It has also been discovered through zero emission activities that all-fiber drums can be recycled as a raw material for paper manufacturing, and drums are now being used for this purpose. The Kyowa Hakko Group will continue to work steadily toward the reduction of disposal through incineration.

In the Pharmaceuticals Company, too, the Kyowa Hakko Group has continually worked to introduce environment-friendly packaging materials at the request of its customers. In the past product bottles were fitted with metal caps, but in fiscal 2003 polypropylene caps, which can easily be recovered and recycled, were introduced for all products (approximately 180,000 bottles). Since July 2004, recycling information has

been displayed on all packaging for pharmaceutical products, including products that are exempt. Another planned improvement is the use of recyclable paper trays in place of molded trays containing calcium carbonate. The Kyowa Hakko Group will continue to target improvements at this detailed level as part of its contribution to progress along the path to the creation of a recycling society.


Comparison of Fiber Drums



Katsunori Kita, Fuji Plant, Kyowa Hakko
Zero Emissions—Effort Still Needed

The Fuji Plant achieved zero emission status in fiscal 2002. Since then the Plant's goal has been to encourage individual zero emission initiatives, and we have established a framework for thought and action by individual workplaces or employees. This approach has resulted in numerous improvement initiatives leading to recycling and reuse. Because waste sorting has become increasingly complex, we established a website last year with a sorting chart in which photographs and diagrams are used to explain the process. Activities such as these are raising the environmental awareness of individual employees, and we hope that they will lead to the acceptance of concepts like "ecology" and "zero emissions" as part of normal activities.


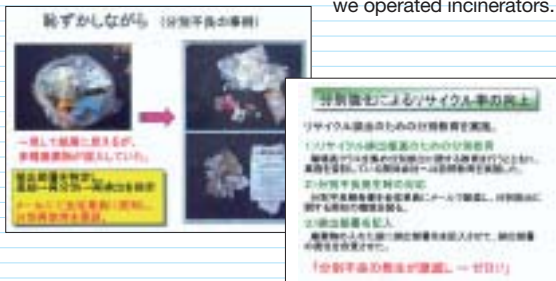
We have also established a Q&A corner where anyone can check sorting methods and find information about disposal.

Takashi Asano, Tsuchiura Plant, Kyowa Hakko
Looking Back on the Path to Zero Emission Status

In the past, about 36% of waste produced at the Tsuchiura Plant was incinerated on-site. However, we switched to outside disposal, based mainly on recycling, because of the tightening of environmental laws concerning the use of incineration facilities, and also because of the need to reduce costs. As a result, we were able to achieve zero emission status.

There has been an additional benefit. By using low-cost recycling methods, we have been able to reduce the disposal cost per unit of weight by about 35% compared with the cost when we operated incinerators.

Environmental Characteristics of Overseas Production Operations

The Kyowa Hakko Group has maintained a 99.8% zero emission ratio for its overseas production operations by transferring technology from Japan. Priority is given to the improvement of resource productivity. This is reflected in an increase in the relative weighting of the amino acid business, which combines low environmental emissions with high added value. Energy consumption has been reduced to 15% of the domestic level in CO₂ terms.

- Energy consumption was equivalent to 55,900kl of crude oil, a 56% year-on-year reduction. The reduction was achieved through a review of the overseas production organization.
- Waste materials from overseas production operations amounted to approximately 260,000 tons, of which almost 100% was recycled.

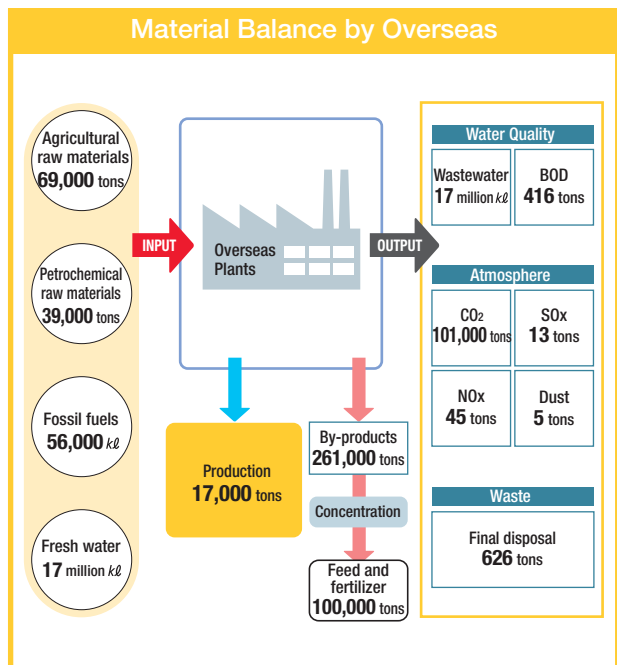
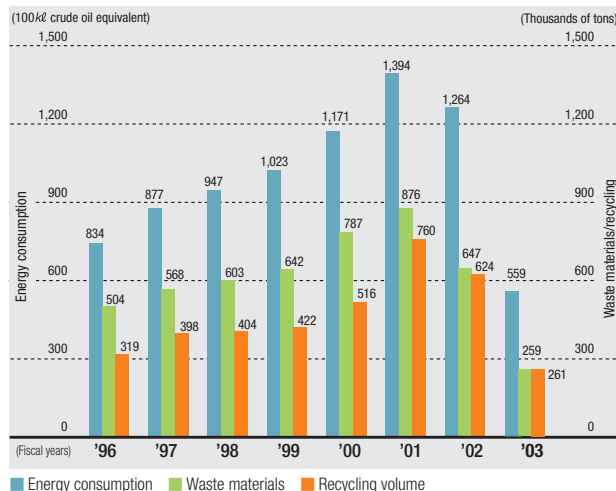
There were two principal overseas production operations in fiscal 2003, BioKyowa Inc. and Agroferm Hungarian-Japanese Fermentation Industry Ltd. (AGROFERM), both of which were involved primarily in the production of amino acids. Using fermentation technology and environmental technology perfected in Japan, they manufacture amino acids for use in foodstuffs, industrial raw materials and animal feed from raw materials containing sugar, which are agricultural products. The Kyowa Hakko Group is a world leader in the development of recycling technology for waste products containing useful substances, and this technology is being used in overseas production activities.



Recycling fermentation by-products as a fertilizer for farmland

The table below shows inputs (raw materials, energy and fresh water) and outputs (products, environmental load emissions) from three overseas sites (BioKyowa, AGROFERM, SSI). (AGROFERM was transferred to the German company Degussa AG in 2004.)

Energy Consumption, Waste Materials and Recycling Volumes at Three Overseas Sites



Ms. Rong Huizhu,
Vice President, Wuxi Kyowa Food Co., Ltd.

The factory of Wuxi Kyowa Food Co., Ltd. is located on the shore of beautiful Lake Taihu. The company has been able to operate without major problems thanks to constant efforts to meet government requirements in relation to wastewater, noise, flue gas and odors. Safety and environmental consideration have also been a feature of the company's new plant from the design stage. Wuxi Kyowa Food has established environmental and safety management systems based on policies established by the president. We will continue to contribute to the development of an attractive environment in Wuxi City through activities based on risk management.

Environmental and Safety Assessments of Overseas Affiliated Companies

The Kyowa Hakko Group conducts joint environmental and safety assessments in cooperation with overseas business sites and affiliated companies. The aim of this process is to strengthen communication, and work together to ensure operational safety and protection of the environment.

Wuxi Kyowa Food Co., Ltd. and Shanghai Guanshengyuan Kyowa Amino Acid Co., Ltd. are affiliated companies in China in which Kyowa Hakko has taken a stake. Although neither company is included in the consolidation, when Kyowa Hakko decided to increase its percentage shareholdings in both, it

took the opportunity to implement joint environmental and safety assessments. Both companies were asked to review their operations and make changes and improvements based on Kyowa Hakko Group's environmental and safety management systems.

CHINA

Wuxi Shanghai

Wuxi Kyowa Food Co., Ltd.

Wuxi City is located 120km west of Shanghai. Its plant, on the shore of Lake Taihu, manufactures natural seasonings for sale throughout China. Established as a Chinese-Japanese joint venture in 1999, it has expanded its sales of seasonings to companies in China. Its basic production process is protein hydrolysis. The Chinese market for genuine natural seasonings has only just begun to develop. The company aims to expand its production capacity and has started operations in a new plant.

There have been no serious work-related accidents. However, the start-up of a new plant represents a major change, and safety management will be an important priority. The site inspection was followed by intensive discussions with factory managers about the development and implementation of a safety management organization based on safety management regulations. The company is expected to make further improvements on the basis of these discussions. This meeting provided renewed confirmation that executives of Wuxi Kyowa Food would be managing their plants with a strong awareness of safety.



Managers meet to discuss safety systems.

Shanghai Guanshengyuan Kyowa Amino Acid Co., Ltd.

Located in the northwestern part of Shanghai, Shanghai Guanshengyuan Kyowa Amino Acid Co., Ltd. manufactures and sells high-quality amino acids for use as raw materials for medical products, such as infusions. The company was established six years ago, but it will soon need to move its operations because of Shanghai's city development plans. At the end of 2005 it will relocate and integrate its production facilities at a new plant on the outskirts of Shanghai. This move will result in a dramatic increase in the company's amino acid production capacity.

While there have been no serious work-related accidents, the shift to a new plant represents a major change, and particular care will be needed with regard to safety management. The company has raised safety awareness by holding safety seminars for factory executives, assistant production managers and team leaders. The seminars consist mainly of analyses of case studies concerning serious accidents.

The President of Shanghai Guanshengyuan Kyowa Amino Acid has received a management excellence award from the Shanghai Chamber of Commerce. He also has a very strong commitment to safety and the environment. The site inspection was followed by an exchange of information and views that resulted in improved understanding between Kyowa Hakko and Shanghai Guanshengyuan Kyowa Amino Acid. Kyowa Hakko representatives emphasized the need for care in managing the major changes associated with the shift to the new factory, especially legal compliance, the restructuring of safety and environmental management organizations, risk assessments for manufacturing facilities, and environmental considerations.



A safety seminar



The management excellence award

Environmental and Safety Risk Management

The Kyowa Hakko Group is determined to prevent environmental contamination and health risks relating to chemical substances, damage resulting from earthquakes or fires, and distribution-related accidents. It has established internal regulations and applies stringent risk management procedures to day-to-day operations.

- In fiscal 2003, emissions of the 12 chemical substances (chemical substances targeted by the chemical industry for priority efforts to reduce emissions) amounted to 9.9 tons. For the second consecutive year, the Kyowa Hakko Group achieved the target of reducing emissions by 97% from the fiscal 1996 levels by fiscal 2004.
- Total emissions of PRTR Law Class I chemical substances were reduced by 13% year-on-year.
- Dioxins and PCBs and CFCs, etc., are managed appropriately. Measures to prevent CFC leakage have been strengthened.

Restrictions on Use of Hazardous Chemicals

As described on Page 12, the safety of chemical substances is assessed as part of the development procedures for new products. Efforts to minimize begin at the research stage. For example, if a substance is found to be highly hazardous, an alternative product is used. In fiscal 2003, the Kyowa Hakko Group revised its green procurement policy, which requires the Group's research facilities and suppliers of raw materials to avoid the use of substances that could be harmful to the ecology or human health. The release of hazardous substances into the environment is strictly regulated, and even small amounts of waste must be disposed of using methods that are appropriate from a risk management perspective, taking into account the characteristics of the chemical substances concerned.

Material Safety Data Sheets (MSDS)

The Kyowa Hakko Group prepares Material Safety Data Sheets (MSDS) for all chemical products, including products under development, as well as for regulated substances in accordance with related laws including PRTR (Pollutant Release and Transfer Register) Law and the Industrial Safety and Health Law.

In addition, Material Safety Data Sheets (MSDS) are prepared for substances used in foods, such as amino acids and nucleic acids. These data sheets are updated as required and promptly distributed to customers.

Soil Pollution Risk Management

In the past, soil surveys were undertaken only when deemed necessary at individual sites. In the future, pollution surveys will be implemented systematically and in accordance with the Soil Pollution Countermeasures Law. Surveys will be based on a risk management approach, including the prevention of pollutant dispersal outside of sites.

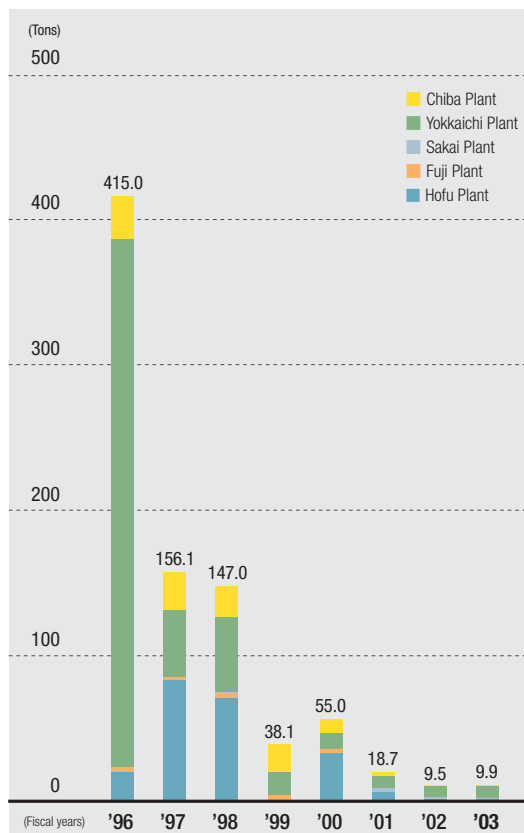
To prevent soil pollution caused by fuel oil, the Kyowa Hakko Group established its own system of voluntary leak checks for the facilities at its four underground tanks. The construction of new underground storage tanks is prohibited.

Restrictions on Emissions of 12 Chemical Substances

The Kyowa Hakko Group aims to reduce emissions of 12 chemical substances by 97% from the fiscal 1996 levels by fiscal 2004. In fiscal 2003, emissions amounted to 9.9 tons, which is similar to the previous year's level. Since this represents a 97.6% reduction from the fiscal 1996 level, the fiscal 2004 target was achieved for the second consecutive year.

The Kyowa Hakko Group is currently improving facilities to reduce emissions of acetaldehyde (and related substances), which are currently in excess of one ton. Facilities to recover chloroform from flue gas are also being enhanced.

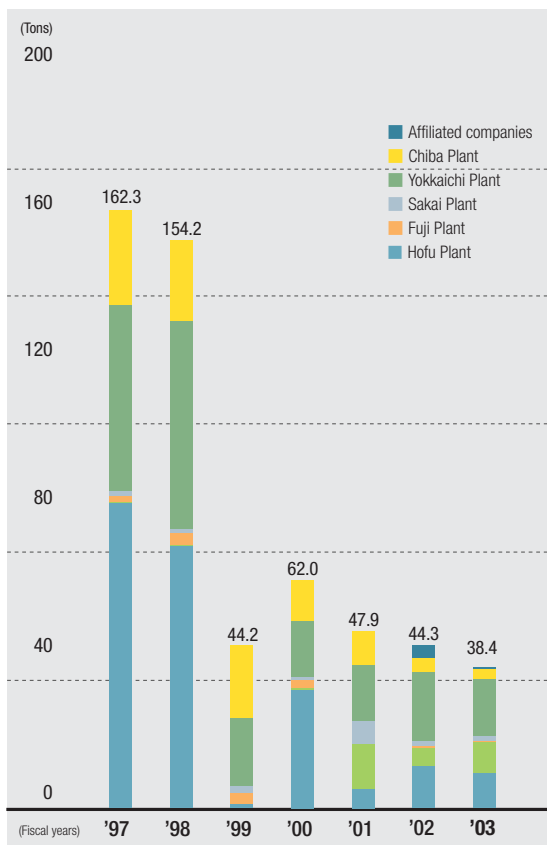
■ Total Emissions of 12 Chemical Substances



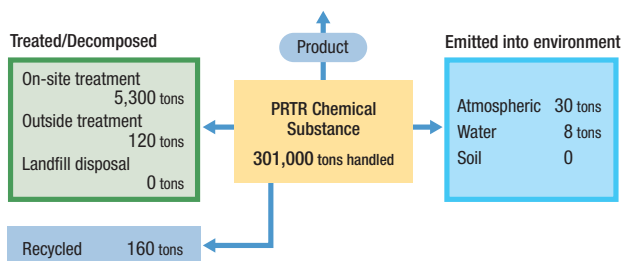
Curbing Emissions of PRTR Law Class I Chemical Substances

In fiscal 2003 the Kyowa Hakko Group submitted notifications as required under the PRTR Law for the eight plants covered by the law. The total amount of Class I substances handled by the Kyowa Hakko Group in fiscal 2003 was approximately 300,000 tons. Emissions into the environment were reduced by 13% year-on-year to 38.4 tons. In terms of risk weighting, the reduction of xylene emissions is regarded as the first priority, and recovery facilities will be installed. The Yokkaichi and Chiba plants use 2-aminoethanol in their CO₂ gas recovery and recycling systems.

■ Total Emissions of Class I Chemical Substances



■ Removal and Emission by Group of PRTR Law Class 1 Chemical Substances



■ Amounts of Class I Chemical Substance Designated under PRTR Law Handled or Released in FY2003

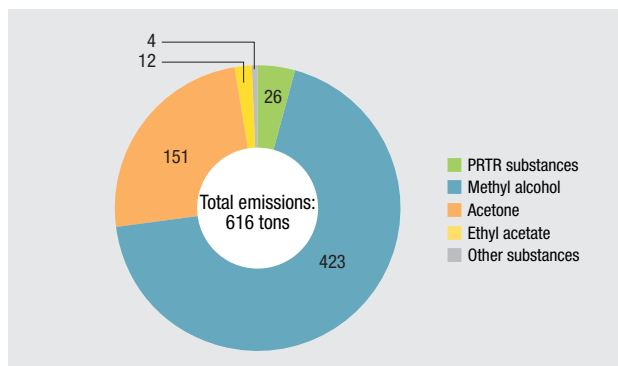
Substance number	Name of substance	Amount handled (t)	Atmosphere released (t)	Water released (t)	Soil released (t)
1	Zinc compounds (water-soluble)	7.5	0	0.1	0
11	Acetaldehyde	113,289.0	0.8	4.5	0
12	Acetonitrile	4.2	0	0	0
16	2-Aminoethanol	44.7	4.7	1.9	0
42	Ethylene oxide	17,568.0	1.6	0	0
43	Ethylene glycol	19,016.0	0	0	0
63	Xylene	35.4	16.9	0	0
70	Chloroacetyl chloride	2.2	0	0	0
85	Chlorodifluoromethane	0.8*	0.8	0	0
95	Chloroform	93.3	1.9	0	0
99	Divanadium pentoxide	4.7	0	0	0
100	Cobalt and its compounds	8.0	0	1.5	0
113	1,4-Dioxane	10.6	0	0	0
116	1,2-Dichloroethane	3.8	0.1	0	0
121	Dichlorodifluoromethane	0.3*	0.3	0	0
172	N,N-Dimethylformamide	37.3	0.1	0	0
217	Trichlorofluoromethane	1.5*	0.9	0	0
223	3,5,5-Trimethyl-1-hexanol	1,152.0	0.1	0	0
227	Toluene	91.0	0.6	0	0
232	Nickel compounds	8.2	0	0	0
272	Bis (2-ethylhexyl) phthalate	70,623.0	0	0	0
297	Benzyl chloride	145.0	0.1	0	0
299	Benzene	1,849.0	0.6	0	0
310	Formaldehyde	393.4	0.4	0	0
312	Phthalic anhydride	76,380.0	0.4	0	0
313	Maleic anhydride	268.5	0	0	0
	Total	301,037.3	30.4	8.0	0
179	Dioxins (mg-TEQ)	65.7	27.7	7.0	0

*1 CFC to recharge freezers

Reducing Emissions of Volatile Organic Compounds (VOCs)

The Kyowa Hakko Group is participating in a voluntary initiative by the Japan Chemical Industry Association. Since 1997 surveys have been conducted concerning the amounts of 430 substances emitted or transported. In fiscal 2003, the Kyowa Hakko Group conducted a detailed emission balance survey of its production processes for methyl alcohol, which accounts for over 70% of VOC emissions. A study was initiated concerning methods to reduce emissions.

■ Emissions of Volatile Organic Compounds (Fiscal 2003)



Dioxin-Related Measures

The Kyowa Hakko Group has shut down, upgraded or renovated its incineration facilities. The only facilities now in use are seven incinerators (Kyowa Hakko: 3, Kyowa Hakko Chemical: 4) that comply with incineration maintenance and management standards introduced in December 2002. Strict control of both hardware and software ensures that dioxin emission levels from all of these incinerators comply with the Law Concerning Special Measures against Dioxins.

Measures Concerning Poly Chlorinated Biphenyls (PCBs)

In the past the Kyowa Hakko Group used transformers and condensers containing PCBs. These items have been placed in secure storage facilities designed to prevent seepage into the ground. The total amount stored at all sites is 2 tons. The storage facilities are inspected periodically to ensure that there is no leakage.

Distribution Safety

The Kyowa Hakko Group makes all possible efforts to ensure that distribution operations are safe and environmentally sound. There is a 24-hour emergency response system as part of its measures to ensure the safe transportation of high-volume, general-purpose products, such as chemicals and alcohol. The Group has also adopted the Yellow Card system promoted by the Japan Chemical Industry Association. Other initiatives include the provision of training for transportation workers. There were no accidents during distribution operations in fiscal 2003.



A Yellow Card
(Emergency response card)

Restricting the Use of Ozone Layer-Depleting Substances

The Kyowa Hakko Group uses CFCs, which are ozone layer-depleting substances, as refrigerants in air conditioners and freezers. All sites and subsidiaries have established facility management standards and carry out regular inspections to check for leaks. CFC replenishment quantities are also monitored. In fiscal 2003 CFC replenishment by the entire Kyowa Hakko Group amounted to 1.9 tons, a reduction of 45% from the previous year's level of 3.5 tons. The Group is actively switching to refrigerants that are less damaging to the ozone layer.

Preparing 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. Earthquake countermeasures at the Fuji Plant were featured in a book on earthquake preparedness for businesses published by the Research Institute of Shizuoka Prefecture in 2001.

Earthquake safety manuals are being updated, and all companies are establishing countermeasures. Disaster safety cards have been distributed to all employees to improve awareness of safety procedures to be followed in the event of a major earthquake.



Earthquake countermeasures at the Fuji Plant were featured in a book on preparedness for a major earthquake in the Tokai region.



Disaster safety card



An earthquake safety drill

Emergency Action Guidelines

We will work to protect the environment and maintain safety and also provide products with consideration of the environment and safety.

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



The Kyowa Hakko Risk Management Manual

Audits and Complaints

Environmental and Safety Auditing

Environmental and safety auditing for the Kyowa Hakko Group includes Corporate Compliance Division audits carried out by the Kyowa Hakko head office as internal audits, as well as conducted by in-house companies and at individual business sites. In addition to these internal audits, there are also system audits under the ISO 14001 standard by an external organization. The items covered by head office audits are described below.

Audit results are reported to those in charge of the operations covered by audits, including Kyowa Hakko site managers and presidents of subsidiaries, and in-house company presidents. Once a year, those audit results are reported to the president of Kyowa Hakko so that management may use the information to review and improve systems. All Kyowa Hakko sites and consolidated subsidiaries were audited in fiscal 2003.

■ Environmental and Safety Audits by Kyowa Hakko Group Head Office

Scope of audits	All Kyowa Hakko Group business sites (6 production sites, 2 research facilities, 8 sales offices, head office) Consolidated and non-consolidated subsidiaries (production, engineering, transportation)
Head office audit items	Management systems Environmental and safety policies, fiscal year policies, project progress Management of site facilities (compliance, performance, emergency responses, etc.)
Audit personnel	Environmental and safety executives, qualified ISO auditors, union representatives
Frequency of audits	Business sites of three main Kyowa Hakko Group companies: annually Consolidated and non-consolidated subsidiaries: once or twice every two years Overseas subsidiaries: once every three years Affiliated company: as required

Complaints Concerning Sites

In fiscal 2003, there were six complaints concerning problems caused to local communities near sites, compared with four in the previous year. As indicated below, the contents of the complaints are related to noise, odors and dust. Immediate steps were taken to deal with each of the complaints and prevent recurrences. Efforts are also being made to prevent such problems so that the number of complaints can be reduced to zero.

■ Complaints about Sites

	Contents of Complaint	Countermeasure
Noise	Vibration during building demolition (Tokyo Research Laboratories)	Modification of method, limitation of working hours
	Compressor noise (Tokyo Research Laboratories)	Soundproofing of compressor room walls
Odors	Odors from final disposal site (Hofu)	Use of site terminated
	Odors from raw sugar drier (Riken Kagaku Co., Ltd.)	Installation of deodorization facilities planned
Other	Black smoke from flue gas combustion system (Yokkaichi)	Improvement of flue gas flow meter, installation of alarm
	Dust scattered during cleaning of smokestack walls (Hofu)	Dust prevention measures implemented during cleaning work

■ Results of Environmental Audits

Examination of energy sources with a view to reducing CO ₂ emissions (Hofu, Yokkaichi)
Efforts to reduce emissions of volatile organic compounds (Hofu, Ube)
Risk management measures for underground storage tanks for hazardous substances (Fuji, Kyowa Medex)
Promotion of environmental considerations in relation to siting conditions (Sakai, Tsuchiura)
Tightening of risk management for shared drainage and treatment facility (Chiba)
Increased efforts to reduce waste and save energy (affiliated companies)
Promotion of environmental consideration in administrative area (sales offices)

■ Results of Safety Audits

Improvement of safety education for contractors' employees and temporary employees (Hofu, Tokyo Research Laboratories)
Increased earthquake countermeasures for employee welfare facilities, etc. (Fuji, Tokyo Research Laboratories)
Reinforcement of facility security inspection organization (Yokkaichi, Chiba)
Clarification of safety responsibilities during engineering work (Chiba)
Promotion of facility safety, including consideration of comprehensive machinery safety standards (general)
Reinforcement of safety management organization and improvement of risk management (subsidiaries)
Top-down promotion of road safety (sales offices)



Third-Party Environmental Management Audit

Inspection Failure of Kyowa Yuka Co., Ltd. (now Kyowa Hakko Chemical)

In fiscal 2003, subsidiary Kyowa Yuka Co., Ltd. (now Kyowa Hakko Chemical) failed to meet the government standards for handling high-pressure gas, and as a result the operation of related facilities was temporarily halted. A range of measures to prevent a recurrence of such an incident have been implemented, and we are doing our utmost to restore trust as soon as possible.

Site Data

Hofu Plant



Location 1-1, Kyowa-machi, Hofu City, Yamaguchi Prefecture

Telephone 0835-22-2511

Site area 870,000m²

Main activities Pharmaceuticals, foodstuffs, biochemicals, alcohol

ISO 14001 accreditation date July 26, 1999

Initiative	Fiscal 2002		Fiscal 2003	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ * ¥100 million of production)	229	215	94%	
SOx emissions (tons/year)	1,164	996	86%	
NOx emissions (tons/year)	302	265	88%	
Dust emissions (tons/year)	12	11	92%	
Wastewater volume (million tons/year)	21	21	100%	
COD levels (tons/year)	612	325	53%	
Nitrogen levels (tons/year)	375	304	81%	
Phosphorous levels (tons/year)	9	6	67%	
Volume of waste materials (tons/year)	136,660	104,254	76%	
Volume of waste disposal at landfill sites (tons/year)	127	51	40%	

*crude-oil equivalent

Ube Plant



Location 2548, Fujimagari, Ube City, Yamaguchi Prefecture

Telephone 0836-22-5500

Site area 570,000m²

Main activities Pharmaceuticals, biochemicals

ISO 14001 accreditation date September 11, 2000

Initiative	Fiscal 2002		Fiscal 2003	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ * ¥100 million of production)	65	64	98%	
SOx emissions (tons/year)	54	67	124%	
NOx emissions (tons/year)	12	15	125%	
Dust emissions (tons/year)	1.2	0.8	67%	
Wastewater volume (million tons/year)	21	23	110%	
COD levels (tons/year)	172	177	103%	
Nitrogen levels (tons/year)	157	141	90%	
Phosphorous levels (tons/year)	6	11	183%	
Volume of waste materials (tons/year)	6,360	7,420	117%	
Volume of waste disposal at landfill sites (tons/year)	800	434	54%	

*crude-oil equivalent

Fuji Plant



Location 1188, Shimotogari, Nagaiizumi-cho, Sunto-gun, Shizuoka Prefecture

Telephone 055-986-7600

Site area 86,000m²

Main activities Pharmaceuticals

ISO 14001 accreditation date May 29, 2000

Initiative	Fiscal 2002		Fiscal 2003	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ * ¥/m ² floor area)	0.18	0.17	94%	
SOx emissions (tons/year)	6	5	83%	
NOx emissions (tons/year)	12	12	100%	
Dust emissions (tons/year)	1	0.1	10%	
Wastewater volume (million tons/year)	3.0	2.5	83%	
COD levels (tons/year)	2	2	100%	
Nitrogen levels (tons/year)	5.1	4.6	89%	
Phosphorous levels (tons/year)	0.5	0.4	84%	
Volume of waste materials (tons/year)	657	665	101%	
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 24,000m²

Main activities Pharmaceuticals

ISO 14001 accreditation date November 27, 2000

Initiative	Fiscal 2002		Fiscal 2003	
	Performance	Performance	Comparison	
Unit energy consumption (kℓ * ¥100 million of production)	28	49	175%	
SOx emissions (tons/year)	0	0	—	
NOx emissions (tons/year)	0.6	0.4	67%	
Dust emissions (tons/year)	0	0	—	
Wastewater volume (million tons/year)	0.1	0.09	90%	
COD levels (tons/year)	6	5	82%	
Nitrogen levels (tons/year)	4	3	75%	
Phosphorous levels (tons/year)	0.3	0.1	33%	
Volume of waste materials (tons/year)	674	544	81%	
Volume of waste disposal at landfill sites (tons/year)	16	8	50%	

*crude-oil equivalent

Tsuchiura Plant



Location	4041, Ami, Ami-machi, Inashiki-gun, Ibaraki Prefecture
Telephone	029-888-8001
Site area	210,000m ²
Main activities	Foodstuffs
ISO 14001 accreditation date	March 21, 2000

Initiative	Fiscal 2002	Fiscal 2003	
	Performance	Performance	Comparison
Unit energy consumption (kℓ*/¥100 million of production)	32	33	103%
SOx emissions (tons/year)	0.5	0.5	100%
NOx emissions (tons/year)	3.7	3.3	89%
Dust emissions (tons/year)	1.4	0.3	21%
Wastewater volume (million tons/year)	0.6	0.6	100%
COD levels (tons/year)	1.9	2.2	116%
Nitrogen levels (tons/year)	1.1	0.9	82%
Phosphorous levels (tons/year)	0.2	0.1	50%
Volume of waste materials (tons/year)	552	489	89%
Volume of waste disposal at landfill sites (tons/year)	21	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	220,000m ²
Main activities	Chemicals
ISO 14001 accreditation date	November 27, 2000

Initiative	Fiscal 2002	Fiscal 2003	
	Performance	Performance	Comparison
Unit energy consumption (ℓ*/Ton of production)	162	166	102%
SOx emissions (tons/year)	0.5	0.3	60%
NOx emissions (tons/year)	39.3	36.2	92%
Dust emissions (tons/year)	1.5	1.9	127%
Wastewater volume (million tons/year)	2.0	2.0	100%
COD levels (tons/year)	21	21	97%
Nitrogen levels (tons/year)	17	12	72%
Phosphorous levels (tons/year)	4	0.8	20%
Volume of waste materials (tons/year)	1,312	980	75%
Volume of waste disposal at landfill sites (tons/year)	101	38	38%

*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	320,000m ²
Main activities	Chemicals, pharmaceuticals
ISO 14001 accreditation date	July 23, 2000

Initiative	Fiscal 2002	Fiscal 2003	
	Performance	Performance	Comparison
Unit energy consumption (ℓ*/Ton of production)	173	166	96%
SOx emissions (tons/year)	2	2	100%
NOx emissions (tons/year)	284	267	94%
Dust emissions (tons/year)	12	10	83%
Wastewater volume (million tons/year)	4.1	3.0	74%
COD levels (tons/year)	235	107	46%
Nitrogen levels (tons/year)	4	5	125%
Phosphorous levels (tons/year)	3	2	67%
Volume of waste materials (tons/year)	46,257	42,519	92%
Volume of waste disposal at landfill sites (tons/year)	174	83	48%

*crude-oil equivalent

Fuji Plant, Kyowa Medex Co., Ltd.



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

Initiative	Fiscal 2002	Fiscal 2003	
	Performance	Performance	Comparison
Unit energy consumption (kℓ*/¥100 million of production)	20.1	13.3	66%
SOx emissions (tons/year)	1.3	1	80%
NOx emissions (tons/year)	8.1	7.6	94%
Dust emissions (tons/year)	0.2	0.2	100%
Wastewater volume (thousand tons/year)	300	166	55%
COD levels (tons/year)	0.27	0.04	15%
Nitrogen levels (tons/year)	—	—	—
Phosphorous levels (tons/year)	—	—	—
Volume of waste materials (tons/year)	65	56	86%
Volume of waste disposal at landfill sites (tons/year)	27	7	26%

*crude-oil equivalent

Financial Performance

There was solid profit growth in fiscal 2003, reflecting efforts to improve earning performance through business restructuring, aggressive sales expansion and cost savings.

Business conditions remained harsh in the year ended March 31, 2004. The Kyowa Hakko Group worked dynamically to improve earnings by expanding sales and reducing costs. It also focused on product development and business restructuring. Net sales were 2.9% lower year-on-year at

¥348,838million, mainly because of the transfer of the liquor business in September 2002. However, these efforts were reflected in a massive 66.8% year-on-year increase in operating income, which amounted to ¥26,836 million.

(Fiscal Year)	Millions of Yen					Thousands of U.S. Dollars* ¹
	2003	2002 ^{*3}	2001	2000	1999	2003
For the Year:						
Net sales	¥348,838	¥359,285	¥378,668	¥375,610	¥374,910	\$3,300,577
Operating income	26,836	16,089	20,357	17,712	21,656	253,912
Net income	10,017	8,485	5,535	9,395	11,274	94,777
Capital expenditures	9,041	11,791	11,454	17,092	21,053	85,543
Depreciation and amortization	11,358	14,768	17,819	18,502	19,153	107,465
R&D expenses	29,206	31,438	29,294	28,921	25,888	276,336
At Year-End:						
Total assets	361,096	368,772	430,113	431,410	433,958	3,416,558
Interest-bearing debt	13,358	51,969	74,354	87,624	102,870	126,388
Total shareholders' equity	225,042	219,047	211,652	194,692	195,039	2,129,265
Employees	6,294	6,749	7,299	7,766	7,866	
					Yen	U.S. Dollars
Per Share Data:						
Net income** ²	¥ 23.0	¥ 19.4	¥ 12.7	¥ 21.6	¥ 26.0	\$0.218
Total shareholders' equity	522.6	505.4	487.5	448.3	449.1	4.945
Cash dividends	7.5	7.5	7.5	7.5	10.0	0.071
					%	
Ratios:						
Return on assets	2.74	2.12	1.28	2.17	2.47	
Return on equity	4.51	3.94	2.72	4.82	5.92	

*¹ U.S. dollar amounts are translated from Japanese yen, for convenience only, at the rate of ¥105.69=US\$1, the approximate exchange rate at March 31, 2004.

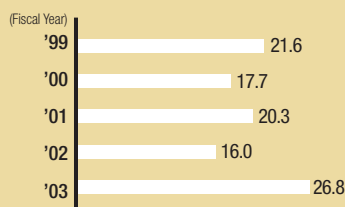
*² Net income per share of common stock is based upon the weighted average number of shares of common stock outstanding during each year, appropriately adjusted for subsequent free distributions of common stock.

*³ Liquor operations were transferred to Asahi Breweries, Ltd. in September 2002.

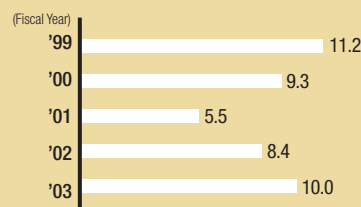
Consolidated Net Sales (Billions of Yen)



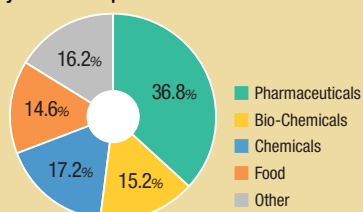
Consolidated Operating Income (Billions of Yen)



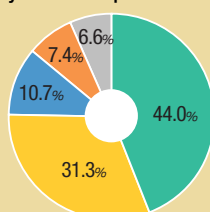
Consolidated Net Income (Billions of Yen)



Net Sales Composition by Business Operations*



Operating Income Composition by Business Operations



R&D Expenses (Billions of Yen)



* Figures include inter-segment transactions.

Third-Party Assessment

A New Look at Sustainability

Dr. Itaru Yasui, Vice-Rector
United Nations University

Readers may have noticed that this year the title of this publication has been changed from “Environmental Report” to “Sustainability Report.” Many companies are now using similar titles for their reports, while the United Nations uses the phrase “sustainable development” in documents relating to the solution of global environmental problems.

You may be surprised to learn that “sustainability” and “sustainable development” have totally different meanings. I first became aware of the need to maintain a clear distinction between these two terms when I was transferred to the United Nations in late 2003. The difference is in the focus of each entity. “Sustainability” refers to the ability of enterprises’ to continue their activities and “sustainable development” refers to the ability of human beings’ on the Earth to sustain human activities.

Corporate sustainability is generally discussed in terms of the “triple bottom line” theory. This theory holds that sustainability consists of economic, social and environmental elements. It can be interpreted as follows. Historically, companies have thought and behaved as organizations that exist solely to pursue economic profit. However, if they ignore the other factors, they are immediately exposed to the risk of attack by progressive members of society. To avoid this business risk, companies must deal with social issues, including racial discrimination, and work to reduce excessive environmental loads.

The concept of “sustainable development,” as used by the United Nations, is based on the view that the Earth has limits, and that human activities should be guided by an awareness of those limits so that we can bequeath a beautiful and rich planet to future generations. The concept does not specifically include social issues, such as racial discrimination and child labor.

What is the purpose of environmental reports and sustainability reports published by companies? Such reports are obviously designed to gain public support and understanding by presenting information on all aspects of a company’s activities. Reports based on the United Nations concept of “sustainable development” would be inadequate for this purpose. Companies clearly need to explain other aspects of their activities and demonstrate to the public in general that they are organizations worthy of trust.

What information should be reported, and in what proportions? There are other reports that deal with the economic aspects, and it is extremely fortunate that the social aspect in Japan is relatively simple compared with other countries.

Former Professor University of Tokyo
Institute of Industrial Science and 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.



<http://www.yasuienv.net>

This means that the most important requirement for a Japanese-style sustainability report is that it contains large amounts of environment-related information.

My first impression of this year’s “Sustainability Report” was that the allocation of space to descriptions of each aspect was just right. In other companies’ reports there is an explicit emphasis on foreign standards. Some companies use their reports to make extremely insistent assertions about themselves, instead of honestly reporting their environmental loads. Their reports do not seem to have been written for a Japanese audience. With this report, however, it was apparent that the intention was to create a report that would present the facts honestly and appropriately to the Japanese public.

As I remarked last year, it is practically impossible to verify the content of this type of report, especially the numerical data, through external audits or other means. For this reason, the impression created by the report is the first priority. The impression that emerges from this report is that its authors are trying to present the facts honestly. One example of this is the use of the expression “zero emissions.” It is clearly understood that emissions can never be reduced to zero, and Kyowa Hakko has therefore based its targets on its own clearly defined definition. This is evidence of honesty.

The fact that I have written this third-party assessment does not guarantee that the content of this report is accurate, or that I agree with the views of the president of the company. I have simply stated my impressions frankly as someone who was in a position to ascertain the extent to which the steady and continuing efforts of company workers are reflected in the report.

This report is not showy or conspicuous, but it seems to be very reliable. I hope that these characteristics will be accepted by society as a whole as examples of new rather than old values.

Third-Party Opinion of the Sustainability Report

Ms. Kimie Tsunoda
Steering Committee Valdez Society

I have read the first and second versions of the proof of “the Sustainability Report.” I think an important change is the fact that the various terms used in the title of last year’s report have been integrated into the single word “Sustainability.” I see this as being equivalent to a declaration by Kyowa Hakko that its establishment of a Corporate Compliance Division represents its first step along the road to a sustainable society. I also appreciate the inclusion of a concise statement of Kyowa Hakko’s vision in the President’s Foreword.

The overall content and layout of the Report provide a clear introduction to the products of the Kyowa Hakko Group and the impact of those products. Another useful feature is the provision of a summary of key points at the beginning of the Report. Features such as these are indicative of your determination to inform even those readers who know little about your business activities.

Negative information is emphasized in the President’s Foreword, as well as on the relevant pages, and corrective actions against these issues are also described. This approach will lead to increased sincerity by Kyowa Hakko.

I would like to offer three suggestions for future Sustainability Reports.

1. Presentation of clearer overall vision

You need to provide an overview and a clearer picture of your vision for the future. That overview should include not only the ways in which your products and business activities are contributing to society, but also the extent of the impact of those products and activities. The information provided should be as specific as possible, even about items that are difficult to quantify. Also, while the information disclosed is

The Valdez Society was established in 1991 as an NGO. It carries out research and provides recommendations on the corporate environmental responsibilities toward sustainability. This work is approached by citizens and corporations joint effort. It is the only coalition member of the CERES in Japan.



relatively quantitative, the presentation should be enhanced to indicate the social significance of the figures.

2. Information about PDCA cycles

It is difficult for external stakeholders to ascertain how you are methodically and continually improving your CSR management systems, including not only environmental issues, but also worker safety, financial affairs and compliance. Disclosure about performance in these areas should not be limited to indications about whether or not targets have been achieved, and the direction of improvement. You should provide concrete information about the mechanisms involved, including the reasons for outcomes, the evaluation methods and perspectives used, and the issues involved.

3. Dialog with various stakeholders

You are already engaged in dialog with stakeholders in your various areas of business. Further expansion of this dialog is needed to improve the “P” (“plan”) part of the PDCA cycle. To maintain the trust and support of the public, you need an ideal vision based on public perceptions of what a company should be. It is through this dialog with various stakeholders that you can ascertain those perceptions.

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

- Q. In the area of chemical substance management, there has been a dramatic reduction in emissions of 12 key chemical substances. There are still questions concerning such issues as why emissions declined so rapidly, how this will affect future production activities, and the implications for previous countermeasures.**
- A.** Respecting the social consensus, the Kyowa Hakko Group without delay tackled measures for independently reducing levels of the 12 chemical substances. Paying careful attention not to affect production, we have undertaken a comprehensive review of all processes. Successful changes resulting from this review include restrictions on the use of toxic substances, emission curtailment, and measures to recover or eliminate substances. We preferentially and continuously focus on measures to address this concern.
- Q. You need to communicate with local residents many times each year. To ensure good communication, you should hold environmental roundtables and dialog sessions.**
- A.** We regard interaction with local residents as an important part of our efforts to maintain dialog with society as a good corporate citizen. We will continue to provide as many opportunities as possible for communication with local residents.
- Q. What steps are you taking in relation to the ISO 12100 international safety standard?**
- A.** From an implementation perspective, we believe that the ISO 12001 standard is equivalent to the Occupational Safety and Health Management System (OSHMS) established by the ILO. Our environmental and safety activities are based on a management system that combines the OSHMS and ISO 14001.

Third-Party Review

Sustainability Report 2004 Third-Party Verification—Written Opinion (Translation from Japanese)



June 30, 2003

From: **Akio Yamamoto**
Verification Advisory Committee Chairman
Yasuo Tanaka
Responsible Care Verification Center Chief Director

To: **Dr. Yuzuru Matsuda**
President and Chief Operating Officer
Kyowa Hakko Kogyo Co., Ltd.

Objectives of Verification

This Responsible Care Report Verification refers to “Sustainability Report 2004,” 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 Hofu Plant.

- Performance indicators and information in the report were verified by sampling.

Opinion

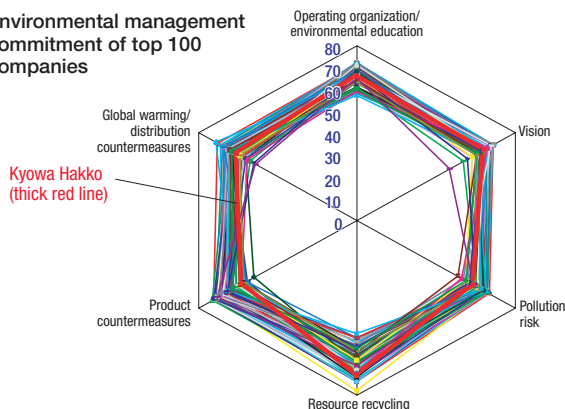
- 1) The reasonableness of methods used to calculate and aggregate performance indicators (numerical data), and the accuracy of numerical values.
 - Performance indicators were calculated and aggregated reasonably by the head office and at the site that was inspected, using uniform formats and reporting procedures stipulated at the corporate level.
 - The company was asked to ensure reliable retention of calculation sheets used for some performance indicators.
- 2) Consistency between information in the report and evidential documents and materials.
 - It was confirmed that the 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 amendment.
- 3) Evaluation of Responsible Care (RC) activities
 - At the Hofu Plant, continuing steps are being taken to counter the problem of odors associated with fermentation of natural products, etc. It is noteworthy that these measures have been effective in reducing the number of complaints.
 - It is worth mentioning that overseas production plants are required to submit performance indicators concerning their RC activities, and that the head office conducts environmental and safety audits.
- 4) Characteristics of the report.
 - It is significant that negative information, such as the withdrawal of approved security inspector certification from Kyowa Hakko Chemical Co. Ltd. (formerly Kyowa Yuka Co., Ltd.), is actively disclosed in the report.
 - It is noteworthy that the report refers to corporate social responsibilities, including relations with communities and employees.
 - It is also notable that an academic expert and an NGO were asked to provide opinions about the report.

Environmental Management Commitment Survey

(Japanese newspaper, Nihon Keizai Shimbun, December 11, 2003)

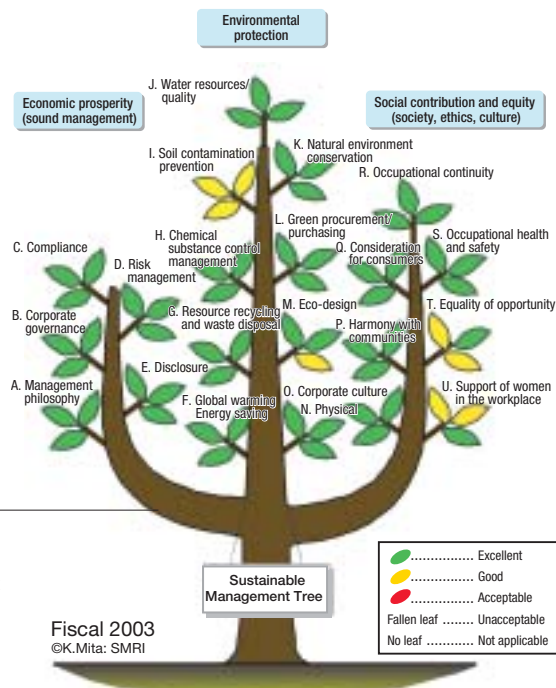
Kyowa Hakko ranked 53rd out of 599 companies. Its ranks in the past seven surveys have ranged between 20th and 85th, with an average of 48th, making it one of the leading companies.

Environmental management commitment of top 100 companies

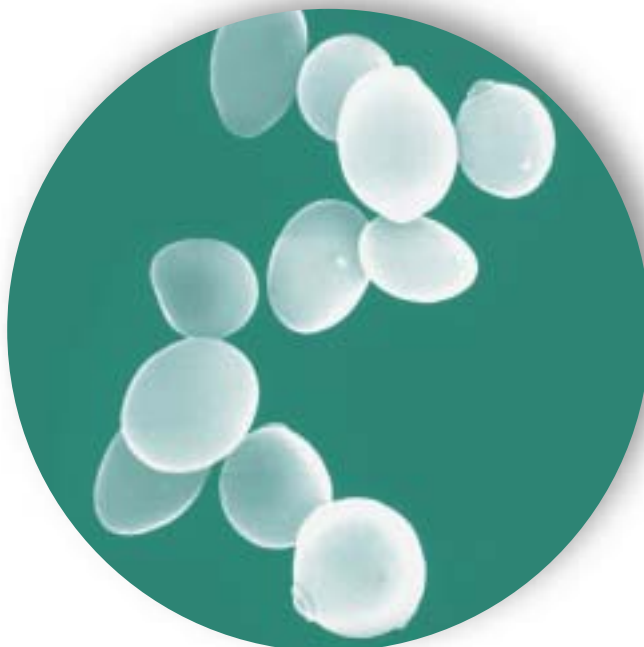


Sustainable Management Rating Institute (SMRI)

Kyowa Hakko was classed as a “Green Top Runner” in the fiscal 2003 Sustainable Management Ratings published by the Sustainable Management Rating Institute (<http://www.smri.jp>). Although challenges still remain in such areas as soil contamination countermeasures, equality of opportunity, and support for women’s employment, Kyowa Hakko will continue its efforts to perform as a company deserving the trust of society.



Fiscal 2003
©K.Mita: SMRI



**A scanning electron microscope image of yeast
(*Saccharomyces cerevisiae*)**

Yeast is the most ancient food microorganism used by humanity and is vital to the production of alcoholic beverages and bread. Kyowa Hakko has made important contributions to the development of enhanced yeasts, including products that reduce mold formation on bread, and a type of yeast that is suitable for use in production of frozen or refrigerated dough, reducing the need for bread production to be carried out in the late-night, early-morning hours.

Photograph:
Keiko Ochiai, Ph.D
Associate Director
Research Planning Department, Tokyo Research Laboratories

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The first "Health, Safety, and the Environment Report" was published in 1999. From the third edition onwards the reports have provided group-level information. The sixth and current edition was compiled as a group sustainability report. In response to public demand for increased disclosure, information about management and performance was expanded. Three of the photographs on the cover were taken by employees, in keeping with the "self-produced" spirit of this publication.

