Environment, Safety and Social Report 2004

April 1, 2003 – March 31, 2004

Kao Corporation

CONTENTS

[Editorial Policy]

- ◆ Since 1998, Kao has been issuing its 'Environment and Safety Report' yearly and is committed to enhancing its information disclosure regarding environmental issues.
- ◆ In the 2004 edition, the contents of columns for the staff in charge of each section have been enriched and noteworthy topics for the better understanding of this activity are featured.
- ◆ Updates to page layout, figures, pictures and explanation of terms to express in a more understandable fashion have been carried out, with the aim of being read by more stakeholders*1 and delivering reliable information sincerely and clearly.
- ◆ Emphasis has been put on the reporting of social aspects and the titling of this Report has also been updated to the "Environment, Safety and Social Report".
- ◆ This Report has been compiled in accordance with the Environmental Report Guideline 2003 edition issued by the Japanese Ministry of the Environment.

[Extent of Reporting]

- ◆ Organizations covered: Domestic offices and plants introduced on page 4 of the Kao Corporate Profile.
- ◆ Period covered: Fiscal Year 2003 (From April 1, 2003 to March 31, 2004)
  Note: Contents of the activities are partially covered up to April 2004
- ◆ Areas: Details of environmental, occupational safety and health and disaster prevention activities, and social activities. The figures for environmental loads and occupational health and safety and disaster prevention activities cover both for plants and laboratories. Environmental accounting is on an aggregate basis for Kao Corporation and four fully consolidated Japanese subsidiaries.
- ◆ URL: http://www.kao.co.jp/

*1 Stakeholder: Interested parties for the corporation which includes consumers, employees, business partners, shareholders, investors, regional community and administrative authorities.

Aim to Facilitate High Level Balance Between Both Business Activities and Environmental Conservation

Kao recognizes that its corporate mission is to dedicate itself to the realization of prosperous lifestyles for people through its products.

For the fulfillment of this corporate mission in the age to come, Kao has to have a keen interest in introducing products not merely superior in their features and functions but which appeal directly to the consumers' heart and have relevance to consumers' daily routines.

The number of consumers who positively appreciate our products has significantly increased, the effect of the Company reducing its load on the environment by decreasing waste volume, which results in consumers feeling comfortable using Kao products. Needless to say, the products' safety and environmental awareness, of course, arouses consumer empathy for the products and constitutes the basis for continuous support.

In our general corporate activities, we realize people's aspect in evaluating corporations became stricter than ever regarding the abidance of applicable laws and corporate ethics, upholding of management transparency. Kao's founder Tomiro Nagase left the message "One should know that great success in life is not possible without good fortune. Good fortune is given to only those who work hard and behave with integrity" Currently, each Kao Group company is strongly encouraged to have the attitude of self-discipline which we could find in this aphorism. In April 2003, Kao revised the existing "Kao's Corporate Activity Ethics" into "Kao's Business Conduct Guidelines" and further clarified the code of conduct for the Company and employees. All members of domestic Kao group companies have submitted a written commitment to these guidelines. In that context, the Company reconfirmed to pay sufficient consideration to the environment and safety company-wide. (Refer to page 8 to 9 for all items of guidelines.)

Kao has been continuously tackling counter-environmental issues since 1980 and from 1995, the Company has been promoting Responsible Care (RC) activities, self-imposed activities regarding the environment and safety in chemical industries. Realizing that Responsible Care activities are key, Kao is urging improvements to environmentally-conscious issues focusing on energy saving, reduction of carbon dioxide gas emission and industrial waste, and decreasing chemical substances exhaust as important factors. Kao newly set up criteria for the procurement of of "Green Purchase", the social movement to put purchase priority on environmentally-conscious goods or service in Japan, and started operation from April 2004.

In addition to these activities, Kao proactively promotes the development of environmentally-conscious products taking the product life cycle into consideration. To achieve this, the Company is in a hurry to work out environmental assessment techniques on particular products at the design stage.

As to environmental conservation for affiliate companies, including those overseas, Kao has the future task of integrating this movement from each regional response to a global scale operation. This report has changed its title this year to "Environment, Safety and Social Report", adding an independent description on its interaction with society, in addition to the aforesaid activities on environment conservation and safety assurance.

Through the implementation of various activities mentioned here, as President & CEO of Kao Corporation, I place my utmost efforts on executing the mission to be dedicated to the realization of a rich society in terms of lifestyle, facilitating a good balance between both business activities and environmental conservation while maintaining an ethical corporate culture.

July 2004

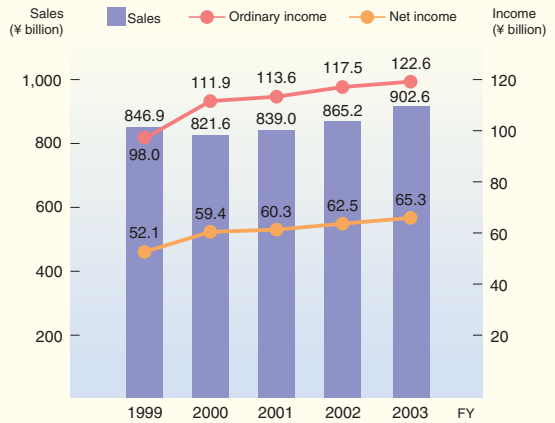
Motoki Ozaki
President & CEO

Company Outline

(as of March 31, 2004)

Corporate Name	Kao Corporation
Address	14-10, Nihonbashi Kayabacho 1-chome, Chuo-ku, Tokyo 103-8210 Japan
Founding Date	June 1887
Company Registration	May 1940
Capital	¥85.4 billion

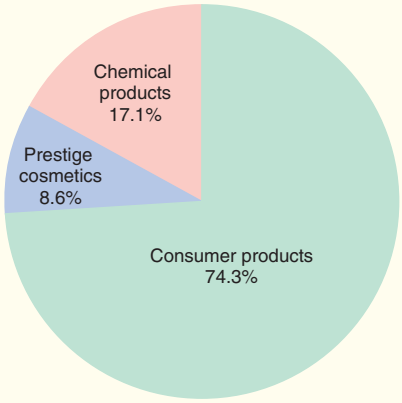
◆ Consolidated sales and income



* Scope of the consolidation and application scope of equity method are as follows. Consolidated subsidiaries: 79, Non-consolidated subsidiaries with equity method applied: 3, Affiliates with equity method applied: 8

* Please refer to Data section Page 52 for Non-consolidated sales, income and number of employees

◆ Breakdown of consolidated sales in FY 2003



◆ Domestic offices, plants and research laboratories.

Offices	Kayabacho Head Office(Chuo-ku,Tokyo) Osaka Office (Nishi-ku,Osaka-shi,Osaka) Sumida Office (Sumida-ku,Tokyo)
Plants	Wakayama Plant (Wakayama-shi,Wakayama) Tokyo Plant (Sumida-ku,Tokyo) Sakata Plant (Sakata-shi, Yamagata) Kawasaki Plant (Kawasaki-shi, Kanagawa) Tochigi Plant (Haga-gun, Tochigi) Kashima Plant (Kashima-gun, Ibaraki) Toyohashi Plant (Toyohashi-shi, Aichi) Ehime Sanitary Products Co.,Ltd. (Saijo-shi, Ehime)
Research laboratories	Wakayama Research Laboratories. (Wakayama-shi, Wakayama) Tokyo Research Laboratories (Sumida-ku, Tokyo) Tochigi Research Laboratories (Haga-gun, Tochigi)

* Although Ehime Sanitary Products Co.,Ltd. is not part of Kao Corporation, it is regarded as Kao's plant in this report, because it only produces Kao products.

* Please refer to the Data Page 56 for each plant's address, site area, production volume and product breakdown.

◆ Create and develop new business segments

Health Care Business

- *Healthya* Green Tea drink was initially launched in convenience stores in the Kanto-Koshinetsu area in May 2003, and in February 2004, the sales area expanded throughout Japan. Turnover of *Healthya* in 2003 reached approximately 20 billion yen.
- The Health Care Research Center was completed on the Sumida complex in February 2004. The seven-storey building with a total floor area of 9,800m^2 houses the healthcare and aroma chemical research sections.

Chemical Products

- Slurries for polishing hard disks, and toner auxiliary for inkjet printer which were introduced in the market in 2001 and 2002 respectively, have sold well and contributed considerably to the business in 2003.

Description of business contents – Pursuing Cleanliness, Beauty and Health for All

The “Development of superior products” for the best fit of consumers and “Profitable Growth” are defined as our basic management policies and also Consumer Products, Prestige Cosmetics - *Kao Sofina* and Chemical Products are deemed our three core businesses. Based on these, business deployment has now advanced in Japan, Asia, North America and Europe.

Consumer products

Personal care

Soaps
Skin care products
Body care products
Shampoos, conditioners and hair treatment products
Hair styling agents
Hair coloring agents
Men’s products
Oral care products
Bath additives and others

Fabric and homecare

Laundry detergents
Fabric softeners
Laundry finisher
Bleach
Dishwashing detergents
House cleaning detergents
Paper cleaning products and others
Pet care products

Feminine and baby care

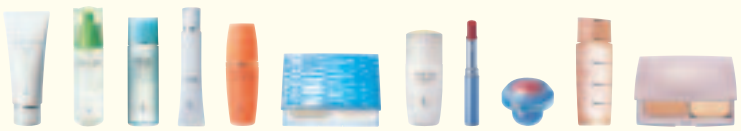
Sanitary napkins
Baby wipes
Hygiene care products
Disposable diapers
Incontinence products

Health care (Functional food)

Healthy cooking oil
Healthy dressings
Healthy mayonnaise
Tea drinks

Prestige cosmetics

Facial cleansers
Basic care
Special care
Foundation
Makeup



Chemical products

Fatty chemicals (Fatty acids, fatty alcohols, glycerin etc.)
Chemical products (Concrete additives, de-inking agents, aroma chemicals, IT materials)


Fatty alcohol


De-inking agents


Concrete additives


Aroma chemicals


Copier & printer toner

Employees' Commonly Shared Philosophy & Business Conduct Guidelines

Kao's corporate mission is firstly to dedicate itself to the realization of a prosperous society through the "Yoki-Monozukuri*". Further, in order to be a credible and trustworthy corporation for society, we have sincerely been taking our social responsibility as a member of the society seriously by paying attention to the natural environment, abiding by corporate ethics and through social and cultural activities. "The Kao Way" constitute the backbone of the corporate stance toward society and the "Kao Business Conduct Guidelines" specify each employee's code of conduct.

The Kao Way

Since the launch of the first ever high quality domestic facial soap in Japan in 1890, Kao Corporation has been dedicated to "Yoki-Monozukuri*" that meet consumers' true needs. This spirit is explicitly expressed in the Kao Management Principles and has been upheld by each individual employee during the over 110 years of Kao's history. At the dawn of the 21st century, Kao's business activities are expanding globally. In accordance with our Mission Statement, we strive to contribute to society by pursuing cleanliness, beauty and health for all.

Mission Statement

Our mission is "to strive for the wholehearted satisfaction and enrichment of the lives of people globally" through the Company's core domains of cleanliness, beauty, health and chemicals. Fully committed to this mission, all members of the Kao group work together with passion to provide products and brands of excellent value created from the consumer/customer's perspective. In so doing, we "share joy with the consumer/customer".

* "Yoki-Monozukuri" is defined as "a strong commitment by all members to provide products and brands of excellent value for consumer satisfaction".

Kao's Business Conduct Guidelines

Kao developed its "Corporate Activity Ethics" in 1997 as the code of conduct for each board member and all employees. Further enriching its contents and revising to "Kao Business Conduct Guidelines" in April 2003, all members of domestic Kao Group companies have submitted a written commitment to abide by the Guidelines. Based on these Guidelines, board members and employees have been deepening the bond with society while maintaining the support and trust from Kao's consumers and business partners through our stance on daily work and activities.

Principles of Corporate Ethics

- Kao Corporation seeks to be an honest and exemplary company, guided by sensible and fair actions and driven by fundamental adherence to ethical principles that go beyond mere compliance with laws to earn the true respect of society.
- We shall not pursue profits at the expense of the ethical principles set out in Kao's Business Conduct Guidelines.
- Even within a legally acceptable scope, we shall take the most exemplary initiatives.
- Illegal and unethical action is prohibited even if for the purpose of seeking to benefit the Company or if following instructions from a superior.
- We shall not ignore illegal or unethical conduct or other such questionable conduct. Such conduct should be brought to the attention of a superior, the Legal and Compliance Division, the Compliance Committee, or designated external consultants.

Contents of Business Conduct Guidelines

1. Fulfill Responsibilities to Consumers

(1) We shall always strive to develop and provide high quality products that place emphasis on the health and safety of our consumers.

(2) We shall provide consumers with appropriate information regarding the proper use of products.

(3) We shall provide an honest and prompt response to consumer inquiries and complaints.

(4) We shall advertise honestly and sensibly.

2. Thoroughly Consider the Environment and Safety

(1) We shall contribute to the achievement of a sustainable society by giving thorough consideration to environmental conservation and human safety in every aspect of our operations, including product development, manufacture, distribution, consumption and waste disposal.

(2) We shall develop and produce products with a minimum impact on the environment, and wherever practicable, in a manner that efficiently uses and recycles natural resources and energy.

3. Maintain Fair and Honest Transactions

(1) We shall observe both the letter and spirit of all applicable laws and regulations including antitrust laws.

(2) We shall implement strict internal controls to prevent unlawful or unethical transactions.

(3) We shall keep the receiving and giving of business gifts and entertainment within the bounds that are recognized as acceptable business practice in order to avoid undue influence on business transactions or even the appearance of it.

4. Respect Individual Personalities and Abilities, and Maximize Their Potential

(1) We shall respect individuals' personalities and abilities regardless of gender, race, religion or nationality to unite them as the company's collective strength.

(2) We shall evaluate individuals fairly, according to their roles, duties and performance to develop members who proactively challenge and overcome difficulties.

(3) We shall strive to maintain a safe, clean and healthy workplace to achieve an environment that is comfortable to work in.

5. Pursue Profitable Growth and Accommodate Shareholders' Expectations

(1) We shall strive to deliver appropriate returns to shareholders through profitable growth that is based on lawful and ethical business activities.

(2) We shall strive to disclose corporate information to our shareholders and investors, accurately and in a timely fashion.

6. Maintain a Fair, Open and Exemplary Corporate Position

(1) We shall conduct public relations activities that are factually based, and we shall be honest in disclosing necessary or appropriate information to the public. We shall strive to maintain openness. We shall also listen carefully to the voice of the public and be sensitive to opinions, criticisms and cautions that are sincerely expressed.

(2) We shall not engage in any activities which are detrimental to society. Furthermore, we shall resolutely resist pressure by any individual, group or organization to accept or support such activities.

(3) We shall maintain legitimate and lawful relationships with political and governmental entities.

(4) We shall not make any contributions that are illegal or do not meet accepted social standards.

7. Strictly Manage Information and Assets

(1) We shall maintain a correct file of all business records, including accounting records.

(2) We shall conscientiously implement internal control procedures.

(3) We shall carefully manage the company's confidential information, intellectual property and tangible and intangible assets. We shall respect and shall not unlawfully or improperly obtain or use confidential information, privacy information or the intellectual property of others.

8. Contribute to the Enrichment of Society through Cultural and Community Activities.

(1) We shall conduct and support activities that promote the development of science and the arts.

(2) We shall seek to earn goodwill and trust by contributing to local communities as a responsible member of society.

(3) We shall respect the volunteer spirit of individuals who take initiative and responsibility to contribute to society.

9. Respect Cultures of Individual Countries and Observe Laws and International Rules When Conducting Business Activities

(1) We shall observe both the letter and the spirit of the laws of the countries in which we have dealings and we shall respect their cultures.

(2) We shall contribute to the economy, standard of living and culture of those countries through the development of our business activities.

(3) We shall endeavor at Kao Group companies to employ, train and promote capable people in the countries where we conduct business.

(4) We shall observe the laws of Japan and relevant countries/regions when importing and exporting goods.

10. Draw Distinct Line between Business and Private Matters

(1) We shall not engage in insider trading.

(2) Political activities shall only be performed on a personal basis.

(3) Involvement in ideological and religious activities shall be allowed only on a personal basis.

(4) We shall strive to avoid conflicts of interest.

11. Executives and Managers Shall Acknowledge Responsibilities

Executives and managers shall firmly acknowledge that compliance with "Kao's Business Conduct Guidelines" is their responsibility and obligation. They shall also accept the responsibility to communicate the values of "Kao's Business Conduct Guidelines" to their members.

Regarding the issue of personal data protection which is emerging as a social problem recently, it is clearly specified in 7. (3) above that Kao shall strictly control consumers' personal data and shall not utilize it other than for the purpose of Kao's correspondence with the consumer and shall not disclose or offer the information to a third party without the prior consent of the consumer. Kao mainly obtains personal information through consumer consultations and cosmetic consultations. Specific information control of these is described in page 44 of "Bilateral Communication with Consumers".

Mid-Term Goals and Results of FY 2003

Kao aggressively tackled the mid-term goal of an environmental conservation scheme, set at the beginning of FY 2003 and considerable progress was made. New goals have been reset taking into account what were realized as problems through a year of activities and we have already commenced establishing systems to overcome these tasks.

Activities and Results of FY 2003

Under the basic policy of the environment and safety, Kao tackled the task of environmental conservation setting numerical targets for significant items. Targets and results achieved in FY 2003 have been summarized below and yielded positive results for all areas.
Regarding labor accidents and occupational safety and health, risk assessments for machinery and equipment and safety assessments for chemical equipment were newly incorporated into Kao's Occupational Safety and Health Management System (OSHMS), which has brought about functional improvements in efficiency. Consequently, labor accidents caused by direct contact with machinery has decreased, however, on the other hand, quality-of-life type accidents such as slipping and falling have increased and remain a future task.

➡ For details, please refer to Page 38.

As a disaster prevention measure, the checking of each facility's strength against natural disasters such as earthquakes was conducted and as a result, where necessary, reinforcements to buildings have been carried out or are now underway. In addition, damage by tsunami or tidal wave is anticipated. We are now preparing a manual of countermeasures to keep the effects of natural disasters to a minimum.

Special attention was placed on the management of chemical substances. In order to properly manage chemical substances used in raw materials, and semi and final products, we have systematized a total management method for chemical substances. This system facilitates the unification of management for the supervision of applicable laws, physical and chemical properties, safety, and microbiological properties (antiseptic/anti-mold).
We set up criteria for procurement of "Green Purchase" which is a social movement to put purchasing priorities on environmentally-conscious goods or services in Japan, and have completed preparations to put this movement into execution.

➡ For details, please refer to Page 23, 30.

Dedicating itself to the realization and maintenance of a prosperous society, Kao has put an emphasis on social and cultural activities with the theme of promoting the fostering of the next generation. The Company decided to extend financial support equaling 25 million yen to 39 entities for the campaign, "Creating Forests for Everyone" which started in FY 2000. The cumulative amount of financial support for this campaign exceeded 100 million yen. Besides, an interdisciplinary project created from the fusion of the environment and education was newly launched as "Kao's Teachers' Fellowship".

➡ For details, please refer to Page 46.

◆ Mid-Term Goals and Results of FY 2003 for Environment Conservation

Item	Mid-Term Goal	Major Method Employed to Achieve Goal	Results of FY 2003	For details, refer to
Total energy consumed during production activity	Reduce the basic unit index to 75 in 2005 (1990 as 100) on the basis of value added production output	Introduction of co-generation equipment	Achieved 73 in 2003 with accelerated schedule	Pages 26 to 27
CO_2 emissions	In 2010, total emission to be reduced by 6% in comparison with 1990	Focusing on energy saving & switching fuel to LNG	Achieved 12% reduction with accelerated schedule	Page 26
Final disposal of waste	In 2010, final disposal to be less than 2,000 tons	Recycling of incinerated ash	Steadily reduced the volume to 2,750 tons	Pages 28 to 29
Emission of chemical substances subject to PRTR	In 2003, emission of each chemical from respective plants to be less than 1 ton	Switch cleaning agent toluene to other	Achieved the target for all chemical substances subject to PRTR being reduced less than 1 ton	Page 31

Tasks and New Mid-Term Goals

The simultaneous pursuit of both business activities and environmental, safety, social and cultural activities at an advanced level is a significant factor in consideration of the future. Based on the acknowledgement that the consumption of Kao's products itself puts a load on the environment, we newly revised mid-term goals tabulated below. Other than those goals listed on this table, we must also aim for better communication including information disclosure, improvements to employees' education, reinforcement of risk management and establishment of a eco-efficiency index. However, we are in the trial stage of establishing an eco-efficiency index, calculated values for which are posted on Page 21.
We may face unforeseen challenges in due course, however the Company urges the solving of environmental issues as a company-wide goal.

Takuo Goto
Executive Director,
Global Environment & Safety

Takuo Goto

◆ **New Mid-Term Goals**

Item	Mid-Term Goals (FY 2005 to FY 2010)
Energy consumption	Reduce the basic unit index to 70 in 2005 and 65 in 2010 (1990 as 100) on the basis of value added production output
Greenhouse gas emission	Reduce the basic unit index to 65 in 2005 and 62 in 2010 (1990 as 100) on the basis of value added production output
Final disposed amount of waste	Zero emission*1 to be achieved in 2005 for Kao Corporation as a whole Final disposed amount of waste to be less than 500 tons in 2010
Emission of chemical substances subject to PRTR	Emission of each chemical from respective plants to be maintained at less than 1 ton
Emission of V.O.C.*2	In 2010, emission of each V.O.C. chemical from respective plants to be less than 1 ton
Green purchase & procurement	Green purchase amount ratio and procurement amount ratio*3 for copy paper or stationery to be more than 90% in 2005 and 100% in 2010
Labor accidents	Total number of labor accidents in Production & Engineering Division and Research & Development Division to be reduced to less than 70% of the 2003 figure, in 2005

*1 Zero Emission : To reduce the final disposal waste to less than 0.5% of the total waste generated in volume on annual base.
*2 V.O.C. : Abbreviation for volatile organic compounds. Collective term for organic compounds with boiling points between 50º C and 260º C present in the atmosphere. The Industrial Structure Council of the Ministry of Economy, Trade and Industry has proposed 35 substances, and the Japan Chemical Industry Association has proposed 41 substances.
*3 Green Procurement Amount Ratio : The procurement ratio of goods purchased from vendors or manufacturers who have attained a certain ranking by assessment for environmental conservation, against all purchased goods necessary for production.

Highlights of Environmental, Safety and Social Activities FY 2003

■ Establishment of the "Kao Business Conduct Guidelines"

To fulfill our mission, we established "Kao Business Conduct Guidelines" in April, 2003 outlining our goal to be an "Honest and ethical company", guided by sensible and fair actions and driven by fundamental adherence to ethical principles that go beyond mere compliance with applicable laws in order to earn the true respect of society.

➡ For details, please refer to Pages 8 to 9.

■ Achieved remarkable reduction of CO_2 emissions

By the implementation of co-generation facilities in the plants, intensifying energy-saving activities and campaigns for better productivity, CO_2 emission was reduced to 497,000 tons in FY 2003 resulting in a 6% reduction from the previous year and a 12% reduction compared to 1990.

➡ For details, please refer to Page 26.

■ 3 plants achieved zero emission

Ehime Sanitary Products Co.,Ltd., achieved a reduction of final disposal amount of industrial waste to 5 ton in FY 2003 and the final disposal ratio was 0.1% against the whole generated amount of waste resulting in zero emission*. Also at Kawasaki and Kashima plants, zero emissions were attained by securing of less than 0.5% final disposal ratios.

➡ For details, please refer to Page 29.

* Zero emission is defined as the final disposal amount of industrial waste being reduced to less than 0.5% in each particular plant or firm against the whole generated amount of waste.

■ Emission of all chemical substances subject to PRTR reduced to less than 1 ton.

As 13 tons of toluene were emitted into the air in FY2002, we changed this to a substitute chemical and achieved an emission amount for each chemical substances subject to PRTR from respective plants of less than 1 ton.

➡ For details, please refer to Page 31 and Data Page 55.

■ "Kao's Teachers' Fellowship" launched

In collaboration with the Non Profit Organization 'Earth Watch Japan', we launched the "Kao's Teachers' Fellowship" program in February 2004 to support and offer opportunities for teachers who facilitate environmental education, to attend overseas' field research projects.

➡ For details, please refer to Page 46.

Symbiosis with Nature

Life Cycle of Products and Breakdown of Environmental Burden

To continuously maintain sound and healthy lives, humans have always been fully dependent upon the global environment of the earth and its mountains, rivers, oceans and biodiversities. Most of Kao's products are daily commodities used in ordinary families. After usage of these goods, soluble products would be discharged into the earth's environment as raw sewage and the packaging would be disposed as waste. No company can continue to carry out its business activities without placing a burden on the earth's environment. Kao aims to produce useful products for daily life in the future also; on the other hand, we are of the opinion that as a company, we should minimize the load on the environment as much as possible lessening adverse affects or risks. Especially, we recognized the following four points as major environmental loads generating from business activities and reduction or recycling efforts have been undertaken.

- Emission of greenhouse effect gases such as CO_2

➡ For details, please refer to Pages 26 to 27

- Disposal of industrial waste

➡ For details, please refer to Pages 28 to 29

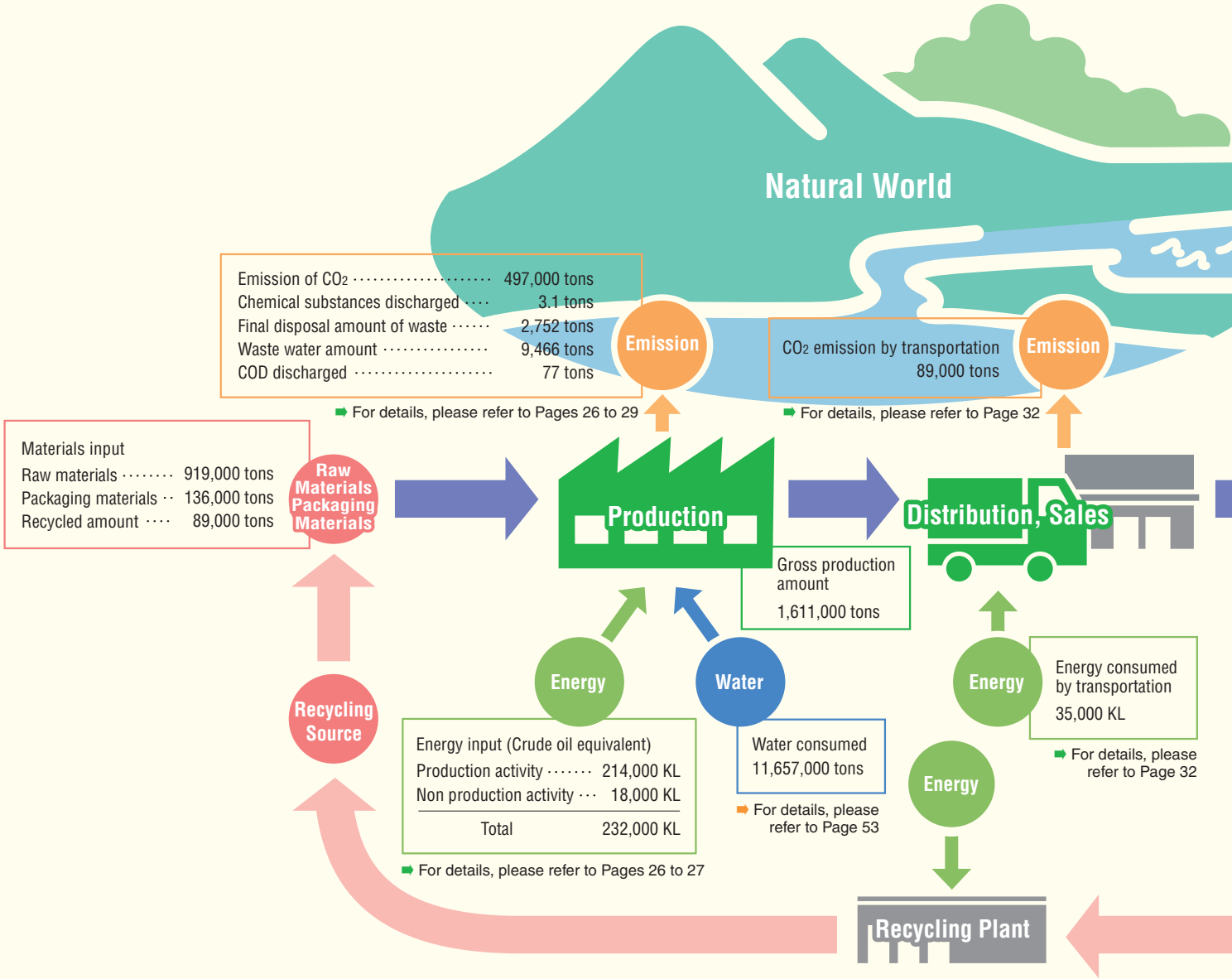
- Discharge of chemical substances to the environment

➡ For details, please refer to Pages 30 to 31

- Disposal of packaging

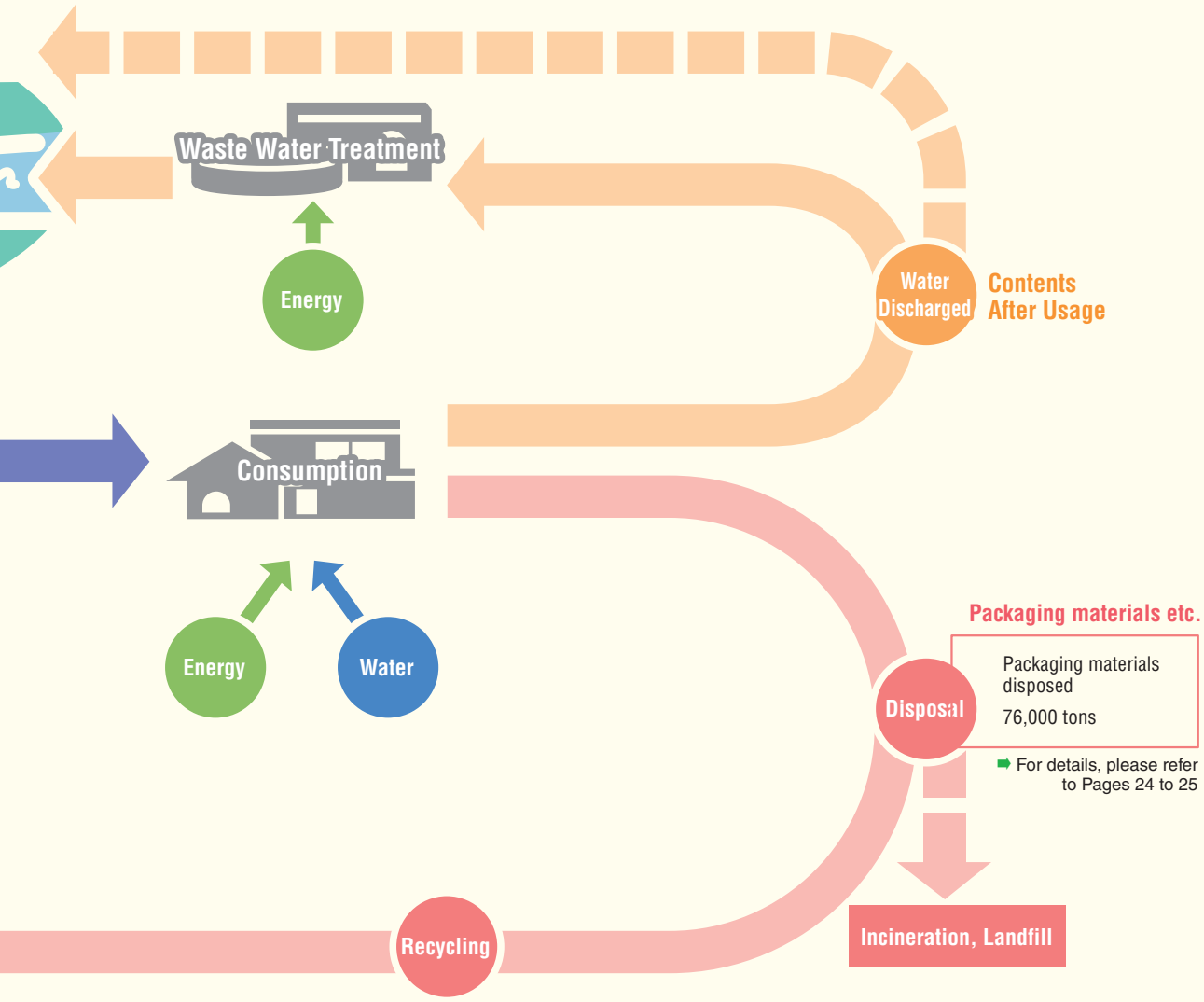
➡ For details, please refer to Pages 24 to 25

Kao has been urging these environmental counter-measures not only as an individual company but uniformly as an industry group member. The Company also makes ongoing efforts to hand over the earth's rich environment to the next generation toward the realization of a sustainable society with the cooperation of Kao's stakeholders.



◆ Substance Flow for Business Activities, Meanings & Definitions of Each Indicator

Materials input (Raw materials)	Volumes of raw materials directly used for product, manufacturing (excluding materials for containers, packages, fuel etc.)
Materials input (Packaging materials consumed)	Total volume of containers, packages and cardboard boxes used for the Company's products sold
Materials input (Recycled amount)	Volume of waste generated by production & research activities which are then recycled by the Company (including thermal-recycle)
Energy input (Production activity)	Total energy consumed in production activities (excluding heat recycled from thermal-recycle of waste)
Energy input (Non-production activity)	Total energy consumed in the non-productive activity of office work and research project
Water consumed	Total volume of water consumed
Gross production amount	All products and raw materials which are manufactured at Kao's plants as a whole
Amount of CO_2 emission	Total amount of CO_2 gas emitted by business activities
Chemical substances discharged	Volume of chemical substances subject to PRTR emitted into the air and water
Final disposal amount of waste	Final disposal amount of waste discharged from manufacturing and research activities
Waste water amount	Total amount of waste water from all Kao's plants
COD discharged	Volume of chemical oxygen demand (COD) discharged, calculated by multiplying the waste water volume by COD concentration
Energy consumed by transportation	Volume of crude oil consumed by transportation, estimated gas mileage for domestic products (from plants to distribution point) and industrial products
CO_2 emission by transportation	Amount of CO_2 emission estimated for domestic products (from plants to distribution point) and industrial products
Packaging materials waste	Volume of containers and packaging materials used for products sold (excluding cardboard boxes)



Environmental Management Based on Responsible Care

Fundamental Philosophy and Policies Regarding the Environment and Safety

Kao's philosophy and policies regarding the environment and safety were established in 1995 to define in detail the Company's activities concerning these areas, in accordance with the spirit expressed in "The Kao Way". Environmental management promoted through the integration of both 'the Environment' and 'Safety' is an important issue for maintaining business activities. Kao conducts the 5 types of activities outlined by the Japan Responsible Care Council (JRCC) for responding to environmental management i.e., "Environmental Conservation", "Process Safety and Disaster Prevention", "Occupational Safety and Health", "Chemical and Products Safety", "Distribution Safety" and conduct dialogue with the community in relation to the said 5 activities respectively. The Company also strives to disclose information about its activities in relation to the environment and safety and makes efforts to win trust from society.

Philosophy Regarding the Environment and Safety

Kao is committed to a responsible approach to the environment and safety throughout the entire life cycle of products, from product development, production & distribution to consumption and final disposal. At the same time, Kao endeavors to contribute to sustainable development and a higher quality of life for people all around the world.

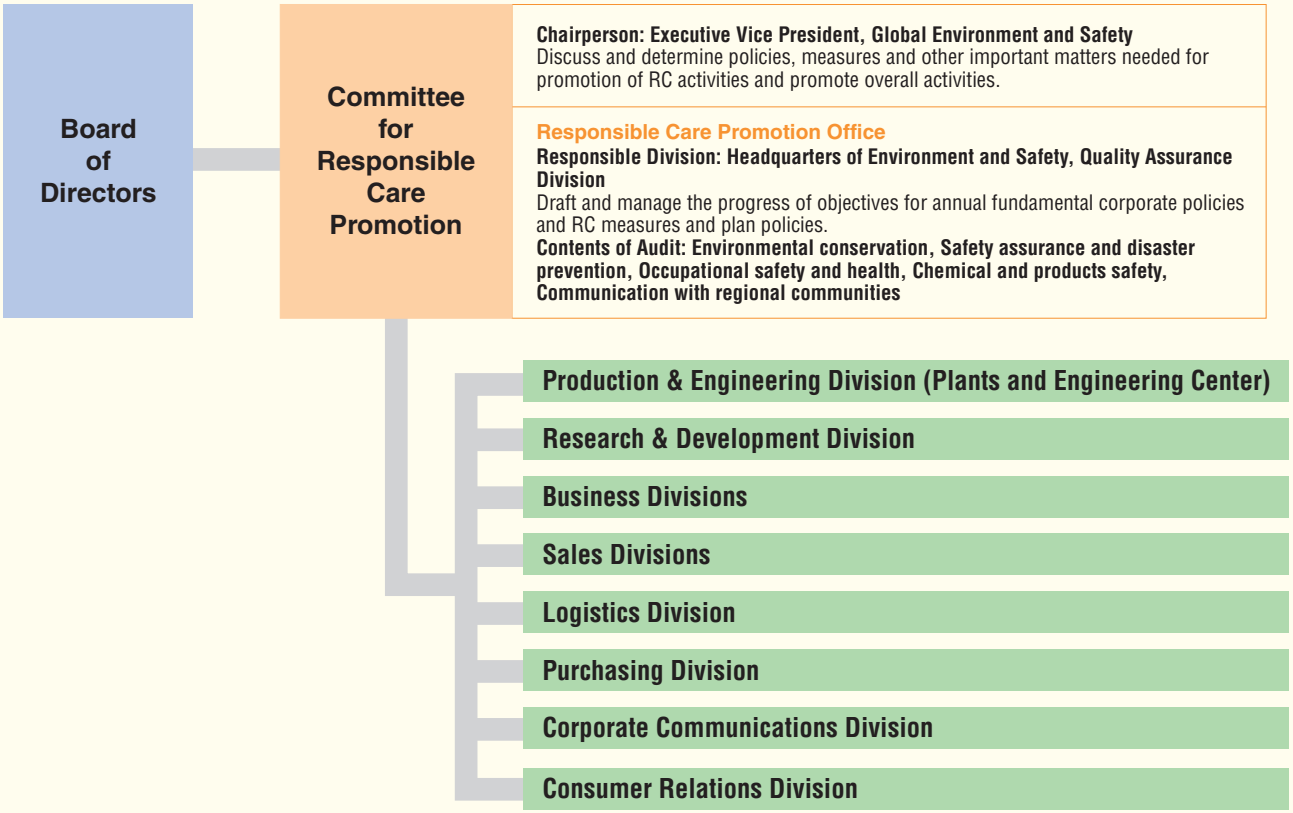
Policies Regarding the Environment and Safety

1. **Maintain employees' health and safety and improve operational safety**
   Improve the working environment so that employees can work in a healthy and safer environment, maintain safe operations, provide regular training to employees on safe work practices and in preparation for emergencies.
2. **Develop products with attention to the environment and safety**
   Assess environmental and safety aspects throughout the entire life cycle of the products, from manufacture through disposal, when developing products and technologies. Offer products with a lower environmental burden and ensure safe usage for consumers, providing appropriate information i.e. instructions regarding proper use, caution.
3. **Save resources and energy and reduce waste**
   To protect the global environment, develop technologies at the product design stage, which address the issues of energy and resource saving and the reduction of waste, raise productivity in terms of resources and energy, reduce waste and byproducts, reuse and recycle resources and energy.
4. **Promote human safety in the community and take a responsible approach to environmental conservation**
   Proactively implement environmental measures as a community member to improve safety for people in the community and conserve the environment. Solve issues that adversely influence the environment and safety responsibly and without delay.
5. **Comply with laws and internal controls**
   Comply with relevant laws and bylaws in all business activities, set and follow the Company's own code of behavior.
6. **Provide adequate training**
   Consistently promote training on environmental and safety issues to employees, raise each individual's awareness of their personal responsibility, from management to regular employees.
7. **Conduct evaluations and improve credibility in the community**
   Conduct regular audits and self-evaluation to continuously improve activities in the PDCA cycle.
8. **Disclose information and improve credibility in the community**
   Proactively disclose environmental and safety policies and data, improve credibility in the community through open & bilateral communication.

Organization and Promoting Items

Kao has been conducting Responsible Care (RC) Activities to reduce the burden on the environment and ensure security of products from production to consumption and disposal. In order to realize a smooth implementation, each individual division, for example, the Research & Development Division, and the Production & Engineering Division, has to take their own responsibilities as a fundamental point. Furthermore, as a lateral organization to bind each division, the "Committee for Responsible Care Promotion" promotes and checks specific activities in accordance with each organizational mission and annual schedule.

◆ **Organization for Environment and Safety Issues**



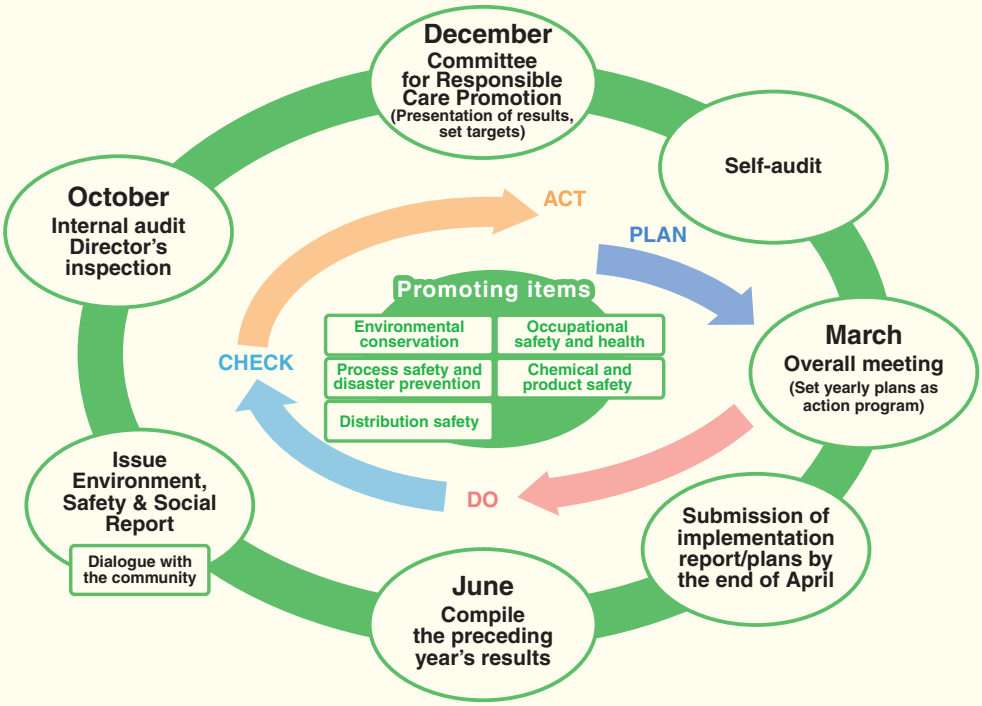
◆ **Promoting Items of RC Activities**

Environmental conservation	Promote human health, conserve the natural environment, set target and promote of energy saving, reduce waste, response to PRTR, 'Green Purchase and Procurement'
Process safety and disaster prevention	Precaution measures for equipment-related disaster, strengthen disaster prevention scheme and minimize damage should disaster occur.
Occupational safety & health	In order to secure safety and promote health for employees, eliminate potential hazardous sources.
Chemical & products safety	Further clarify chemical properties and their handling precautions, secure handlers' safety and health including for consumers and to keep products stewardship.
Distribution safety	Strive to prevent distribution accidents, disasters
Dialogue with the community	Promote more communications with stakeholders and disclose the results of activities to the public yearly.

Continuous Operation and Auditing

Responsible Care (RC) activities are conducted according to the set annual schedule based on the PDCA (Plan, Do, Check and Act) cycle. Every March, each division draws up its respective plan (Plan) for the new fiscal year which is then implemented in April (Do). An internal audit takes place in October to review and track the progress against the plan and confirm that key tasks are on target (Check). In December, the annual meeting of the 'Committee for RC Promotion' is held with the company directors to determine the overall policies and targets for the entire Kao Corporation. (Act) Each division then sets new, improved targets based not only on these company-wide policies and targets, but also on the results of a self-evaluation. The aim is to provide continuous improvement year on year. This year we have added 'Safety Distribution' to our targets in accordance with the Japan Responsible Care Council's (JRCC) additional promotion items.

◆ **Annual Schedule for RC Activities**



Review of Audit

Until now Kao has completed a system evaluation for each division as the main focus of its internal audit. Since the Production & Engineering Division has undergone system reconstruction, evaluation was focused on the performance from 2002. The emphasis has changed from a system evaluation to a performance evaluation (which also includes activities), for those divisions which have already met their initial goals. As part of the directors' inspection any issues relating to occupational safety & health and the environment are taken very seriously. In particular, since any accidents occurring at facilities using high pressure gas would cause extensive damage, these facilities were inspected by a group consisting of a director with responsibility for safety, a plant manager and other members from relevant sections. The Headquarters of the Environment and Safety Department have instigated full inspections of the critical parts of the equipment from this year to ensure the safety of the system.

◆ **Results of Internal Audit in FY2003**

	Production & engineering division	R&D, business and corporate divisions
No. of divisions audited	8	10
No. of questions	66	256
No. of items requiring continuous observation	18	57
Average evaluation score (5 point scale)	4.6	4.7

Continuous Company-wide Environment and Safety Education

The Company continuously educates its own employees and staff of business partners based on the ISO management system and occupational safety management system. In particular, the Company aims to raise the level of awareness and technology of the operators and engineers in the Production and Engineering Division. Many engineers from overseas' plants have attended the Company's safety education which is held in Japan. To raise the employees' level of awareness on a company-wide scale, the introduction of an educational tool which uses the corporate intranet is now in plan.

◆ **Education provided to Production and Engineering Division in FY 2003**

Name of training	Objectives	Number of participants
Techno school	Fostering of operating engineers	22
Basic course of operation	Fostering of junior factory operators	29
Engineer's school	Fostering of junior and middle engineers	23
Extensive general training	Fostering and strengthening of managers	64
Kao Engineering School for High Pressure	Fostering of engineers for high pressure technology	7
Kao Engineering School for Chemicals	Fostering of chemical engineers	9

All the Plants in Japan Attained ISO Approval

In response to the promotion of global businesses, the Company has committed to achieving the ISO 14000 series, the international standard for environmental management systems, and the ISO 9000 series which covers quality management systems. Kao has taken a very thorough approach to standardizing its methods of dealing with environmental and quality assurance issues. Kao has committed to achieve both ISO 14001 and ISO 9001 for all plants throughout Japan.

➡ Please refer to Data Page 52 for the current status of ISO 14001 and ISO 9001 for overseas' plants.

◆ **Status of ISO Attainment** (as of December 2003)

● **ISO 14001**

	(Date of attainment)
● Kashima Plant	December 1998
● Tochigi Plant & Research Laboratories	October 1999
● Ehime Sanitary Products Co.,Ltd	December 1999
● Wakayama Plant & Research Laboratories	February 2000
● Sumida Office, Tokyo Plant & Research Laboratories	April 2000
● Toyohashi Plant	December 2000
● Kawasaki Plant	March 2001
● Sakata Plant	April 2001

● **ISO 9001**

	(Date of attainment)
● Kawasaki Plant	September 2001
● Sumida Office Prestige Cosmetic Business	November 2001
● Tochigi Plant	November 2001
● Toyohashi Plant	
Consumer product Division, Personal Care	November 2001
Binder for casting	January 2003
● Sakata Plant	April 2002
● Wakayama Plant	
Consumer Product Division, Personal Care	July 2002
Consumer Product Division, Fabric & Home Care	July 2003
Chemical Products	July 2003
● Ehime Sanitary Products Co.,Ltd.	February 2003
● Kashima Plant	
Chemical Products	July 2003

Compilation of Environment & Safety Database

Kao consolidated all its environmental and safety information into a single database that could be used to share data with all employees thus aiming to increase trust and openness. The database was named the 'Environmental & Safety Data Management System (Kanchan)', and environmental data and labor/industrial accidents which are mentioned in this report, were input. The Company is developing of the automatic computation system for calculating the amount of greenhouse gases emission and frequency rate of accidents at work. The system, which is already under trial operation, is now used to identify the improvement of systematic defect and functional strengthening. The Company has a scheme to put this system into full operation in the Japanese plants in FY 2003, and to disseminate this to the offices in Japan and affiliate companies, both domestic and overseas, in FY 2004.

Kanchan
(stands for Environment & Safety Data Management System)

Environmental Accounting

● Compilation method for FY 2003

1) Compilation based on the 'Environmental Accounting Guidebook II' issued by the Ministry of the Environment and also with reference to 'Guideline of Environmental Accounting for Chemical Industries: November 2003' issued by the Japan Chemical Industry Association.
2) Covers Kao Corporation and 4 subsidiaries in Japan (Kao Hanbai Co.,Ltd., Kao Cosmetics Sales Co.,Ltd., Ehime Sanitary Products Co.,Ltd., Kao-Quaker Co.,Ltd.)
3) For the period April 1, 2003 to March 31, 2004.

◆ Environmental conservation cost

(Unit: ¥ million)

Category		Main activities	Investment	Cost*1
Cost by business area			1,473	3,790
Breakdown	(1) Pollution prevention	Prevention of air & water pollution	388	1,587
Breakdown	(2) Conservation of the global environment	Energy saving	771	295
Breakdown	(3) Resource circulation	Conservation of resources, processing & disposal of waste	314	1,908
Cost incurred during upstream & downstream production process		Manufacturing of products in an environmentally responsible manner, product recycling, packaging recycling	135	2,665
Cost of management activities		Attainment & maintenance of ISO, disclosure of environmental information, greening of offices and plants	26	879
Cost of research & development		Development of products in an environmentally responsible manner	205	1,733
Cost of social activities		Nature conservation of surrounding plants & greening, support funding	0	114
Cost of amending environmental damage				0
Total			1,839	9,181

*1 : These costs include depreciation allowances.

◆ Environmental conservation effects (Volumetric effect)

(unit: %)

Contents	Category	Value added production basic unit*2 Rate of change*3 vs. FY 2002	vs. FY 1990
Resources used in business activities	Energy consumed in production activities (equivalent to crude oil)	▲ 2	▲ 27
	Total water consumption	▲ 3	▲ 19
Environmental burden and waste discharged from business activities	CO_2 emission	▲ 4	▲ 32
	SOx emission	▲ 24	▲ 64
	NOx emission	▲ 3	▲ 0
	Waste water	▲ 6	▲ 25
	COD emission	▲ 6	▲ 34
	Waste generated	▲ 2	▲ 35
	Final disposal of waste	▲ 8	▲ 90
	Substances subject to PRTR released in the air	▲ 81	—

*2 : The amount of value added production output per basic unit.
Value added production output is selling-price based production output, excluding variable production cost.
*3 : ▲ in the Rate of change column means decrease.

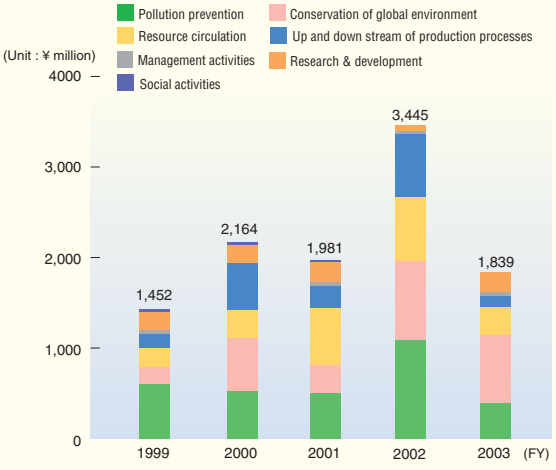
◆ Economic effects (Monetary effect)

(unit: ¥ million)

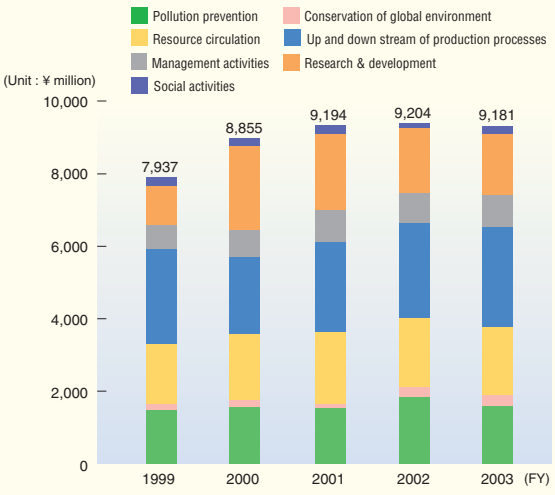
Contents		Amount*4
Proceeds from sales of valuable items	Proceeds from sales of valuable items and fixed assets	208
Cost reduction	Cost reduction through energy conservation	407
	Cost reduction from resources saving	1,056
	Other cost reduction (e.g. maintenance fee for facilities installed for environmental measures)	390
Total		2,061

*4 : The amounts are the total reduction of costs that occurred in FY 2003
- The economic effects are calculated only in terms of sales of valuable items and fixed assets, and cost reductions. In other words, economic effects or deemed effects based on the assumption of evading risk are not included.
- The guidelines issued by the Ministry of the Environment in Japan treat proceeds from sales of valuable items and fixed assets as income. However, as calculation of exact income is difficult, the Company posts them as proceeds.
- The figures for each cost reduction item indicate those only for FY 2003 without including the amount for multiple fiscal years.

◆ Trends in environmental conservation costs (Investment)



◆ Economic effects (Monetary effect)



Eco-efficiency

JEPIX or (Japan Environmental Policy Index) is the new assessment method for environmental performance developed by the team headed by Professor N. Miyazaki of ICU (International Christian University in Japan), Faculty of Liberal Arts. Kao began participating in the JEPIX forum from autumn 2003 and also began studying the application method for environment management.

Study on methodology to assess the environmental burden with single numeric value

If a single numeric value represents the total environmental burden which consists of various loads arising from business activities, we can identify the progress of the environmental improvement at a glance. Kao has been studying the use of this method to represent the environmental burden consisting of various factors as a single numerical value, in order to easily identify the condition of the environment. With a view to obtaining a good balance of economy and environment, there is a term of "Eco-efficiency". The value for the 'Eco-efficiency' is given by the following formula:

$$\text{Eco-efficiency} = \frac{\text{Economic indexes (Sales or value added amount etc.)}}{\text{Emission of environmental burden or resource consumed}}$$

Since several types of environmental burden can be considered as the factors of the denominator, a variety of eco-efficiency can be calculated. It would be more understandable if these calculations could be consolidated into one equation. JEPIX shows the calculation method to use one index, i.e. eco-point derived from over 300 kinds of environmental burdens, based on the target values which are socially agreed through government policies or international treaty. This is an evaluation technique to measure how far the actual emission value from a particular corporation is from the target value specified by Japan's environmental policies or applicable laws. This technique is also called 'Distance to Target' method. We considered this method easy to understand and objective in terms of the evaluation of the environmental burden arising from business activities.

Actual evaluation

The Company is now in the trial stage of this new assessment method and its environmental burden has been assessed in each fiscal year on the basis of the JEPIX method. Eco-efficiencies and its factors are calculated with the following definitions: (Please refer to the Graphs)

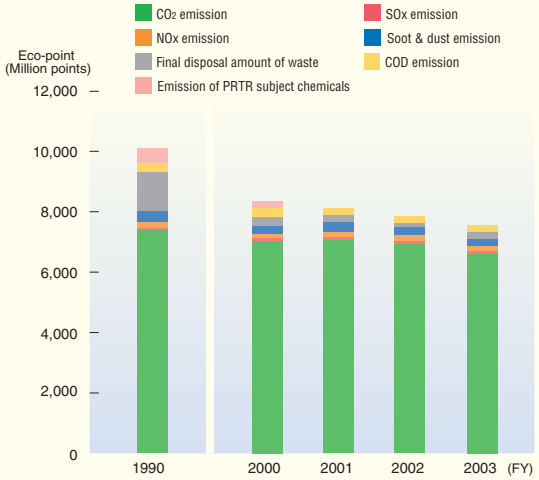
$$\text{Eco-efficiency} = \frac{\text{Value added amount (Economic indices)}}{\text{Eco-point}^{*1}\text{ by JEPIX method}}$$

$$\text{Factor} = \frac{\text{Eco-efficiency of particular year}}{\text{Eco-efficiency of 1990}}$$

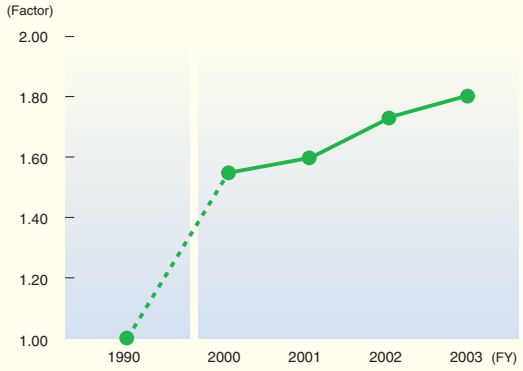
Results and Future Utilization

A series of results were compared with the value of 1990. It was found that the Eco-point decreased between FY 2000 to FY 2003 thus demonstrating the improvement of the Eco-efficiency factor. Remarkable improvements in reduction were observed for the final disposal amount of waste and emission of subject chemicals for PRTR on which the Company had recently focused. The Company aims to conduct further study to pursue economically efficient environmental conservation countermeasures by utilizing concepts such as Eco-efficiency.

◆ **Trends in Eco-points**



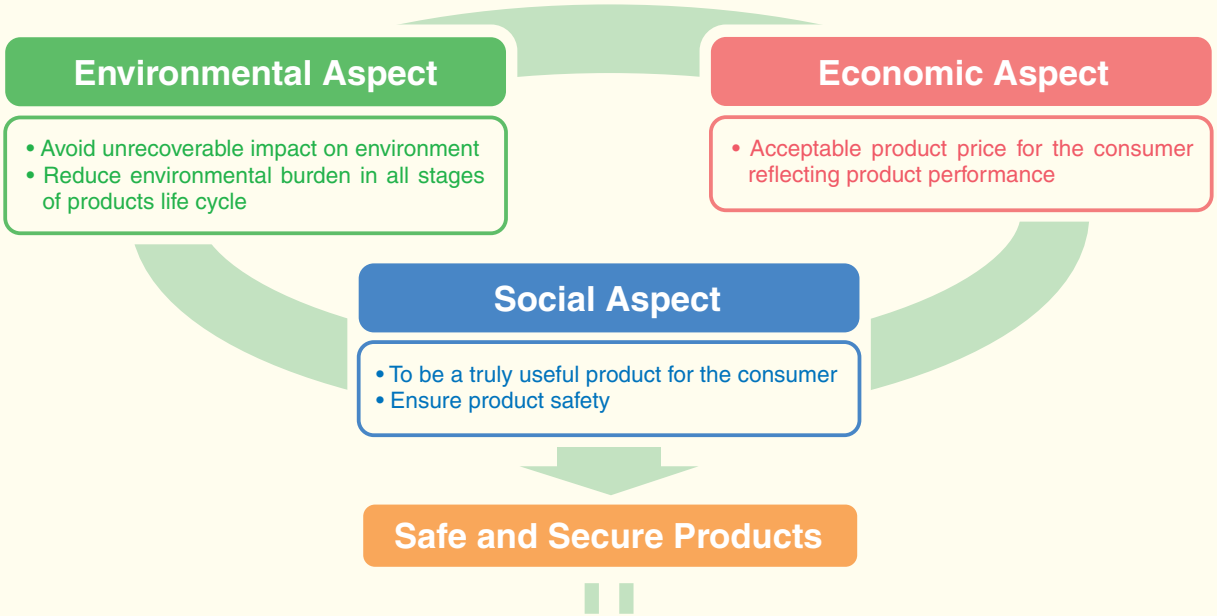
◆ **Trends in factors (Eco-efficiency)**



*1 Calculation of Eco-point: Sum total of the respective Eco-points by JEPIX method, calculated for core indexes of CO_2, SOx, NOx; amount of soot & dust emission; final disposal amount of waste; amount of COD emission and amount of subject chemicals for PRTR emission shown on the guideline of environmental performance indices.

Safety and Environment Conscious Product Development

Ensuring product safety and developing environmentally-conscious products is key to Kao's business philosophy. Kao takes the whole life cycle of a product into consideration from the design stage onwards based on the product development principles, environmentally adaptable design procedures and Green purchase and procurement criteria.



Products and Corporation Aligned with Consumers' Trust

Product Development Embodies Kao's Corporate Mission

Kao's mission is to contribute to the wholehearted satisfaction and the enrichment of the lives of our consumers through the 'Yoki-Monozukuri*'. Therefore, our products have to satisfy and balance the three properties of: 'Social usefulness'; 'Environmentally-Conscious Design'; and 'Economical efficiency'. It is important that Kao's products are not only environmentally-conscious, but have a good cost performance ratio and meet the needs of our consumers. To state this more strongly, 'Kao's 5 principles of product development' have been devised:

* Please refer to Page 8 as of its meaning

5 Principles of Product Development

1. Usefulness and value to society
2. Creativity and originality
3. Effective cost performance
4. Through market and consumer research
5. Comprehensive features of retailers

Safe and Secure Products

Product 'safety' can be confirmed through scientific means, however, guaranteeing 'secure use' of the product is not possible without consumer trust for the product. To ensure that our consumers trust our product range, Kao has been striving for continuing higher levels of compliance with the appropriate regulations and practices such as RC (Responsible Care), issuing guidelines or chemical substances management provision, and focusing on the environmental impact starting at the product design stage. Product safety and security is ratified through the Committee for Safety Assurance, and Safety & Microbial Control Research Center.

Drafting of Design Standard for Environmental Adaptability

In order to ensure that our products have a low environmental impact, product design must consider the whole life cycle of the product from acquisition of raw materials, through manufacturing, distribution, consumer use and disposal. For many years, Kao has championed product development based on the '3R' approach (Reduce, Reuse, Recycle) that focuses on protection of natural resources, energy consumption and efficient utilization of resources. In FY 2003, to further clarify its philosophy, Kao established the 'Design Standard for Environmental Adaptability'. Saving energy and resources, recycling and environmental safety of the product are the key aims of this Standard.

Organization & Standards for Environment and Safety Assessment

For the careful attention to the environment:

Checking the phase and degree of attention paid to the environment

- Standard for environmentally-conscious design adaptability

To secure the products' safety:

Risk management for chemical substances

- Kao comprehensive management standard for chemical substances
- Responsible organization:
  1. Safety and Microbial Control Research Center
  2. Committee for Safety Assurance etc.

Green Purchase & Procurement at Company-wide Scale

In February 2004, Kao established a policy defining the criteria for Green purchase and procurement. This policy means that when the Company purchases goods or materials for production, it selects the vendors who demonstrate a commitment to the environment and gives priority to environmentally-conscious goods or materials. This enables the company to work in partnership with its vendors and subcontractors as they compliment Kao's philosophy to introduce the safety and environmentally conscious products.

➡ For details, please refer to Page 30

A booklet entitled 'ABC of Green Purchase and Procurement' was issued across the company to ensure that the whole Kao organization adopted a unified standard for procurement based on Green purchase. This company standard replaced local procedures operated in its plants and offices.

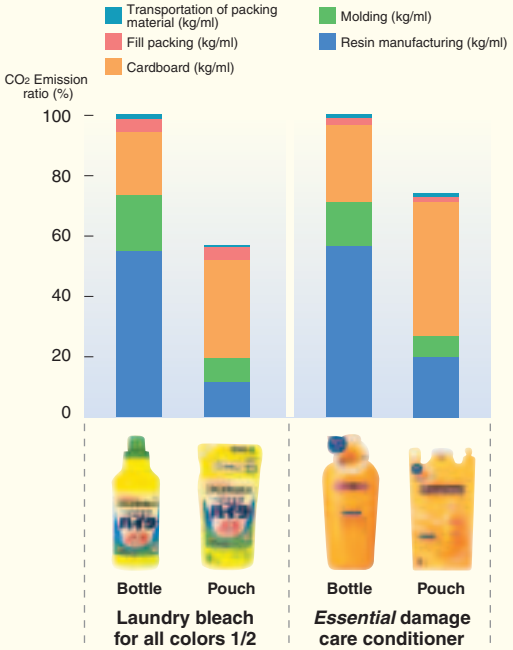
ABC of Green
Purchase & Procurement

Comparison of Environmental Burden from the View Point of LCA*1

Refill pouches are an excellent example of products designed using the concepts of the 'Design Standard for Environmental Adaptability'. Taking a LCA view to compare conventional bottle packaging to refill pouches, shows a reduction of more than 40% in CO_2 emissions in some products. Refill pouches also address the consumer need for an economically efficient and useful product.

◆ Result of LCA Comparison of Pouch and Bottle Package

(Comparison of CO_2 Emission per Unit Package)



◆ Characteristics of Pouch Package

Environmental adaptability (Environmental aspect):
Comparatively lesser CO_2 emission than conventional package

Cost (Economical aspect)
Cheaper than conventional bottle packaging

Usability (Sociality)
Additional refilling action is necessary, gadget for smooth refill considered

*1 LCA: LCA stands for Life Cycle Assessment. This is a method to assess and analyze the total environmental burden generated in all phases of a product's life cycle from extraction of raw materials (resources), manufacturing, usage and disposal. To clarify all the inputs and outputs for manufacturing the products such as raw materials used, energy consumed, emission of harmful matter or waste, and assess any adverse affect to the environment.

Promotion of the Reduce, Reuse and Recycle for Packaging Materials

Kao's attitude is to enhance the product's function and its value by focusing on the economic, social and environmental aspects of product development. This is supported by the 3R's principle of Reduce, Reuse and Recycle the product packaging. Our aim is to trim the waste of the resources and energy consumption in a daily life and help promote an increase in recycling in society. To this end Kao has been proactively promoting the development of refill products and recycling of the packages.

Same Attention for the Product Quality is Rendered for Packaging (Gentle Attention for the Daily Use Products)

Kao has long been developing the concentration and compacting of the products with the aim to improve the products' function, properties and usability. This approach has its origin in Kao's philosophy of product manufacturing itself and is the method used to reduce the input of resources and emission of the waste. The Company's 3R's approach to product packaging can be summarized in the following three points;

(1) Concentration of the product's content and compacting of packaging. (Reduce)
(2) By utilization of refill and replacement products. (Reuse)
(3) Making much of the used package to yield the recycled resin and paper. (Recycle)

Concentrated and Compact Products Enables Total Amount Reduction of Raw and Packaging Materials

In 1987 product improvement efforts began to increase the effectiveness of '*Attack*' laundry detergent. The concentration and washing power of '*Attack*' was increased dramatically, the amount of detergent required per wash was reduced remarkably from 40 grams (before 1986) to 20 grams (in 2000). '*Attack* micro particles' launched in 2001 achieved a further 30% reduction of surface active agent which is the main ingredient of detergent. This corresponds to a saving of 17,000 tons of chemical agent per annum. Introducing such high performance in the detergent had several direct benefits. It reduced the amount of raw materials and allowed the product packaging to be downsized thus reducing waste. Furthermore, it helps in an indirect reduction of CO_2 gas emission caused by reducing the burden of distribution.

In 1987 In 1995 In 2001 In 2003

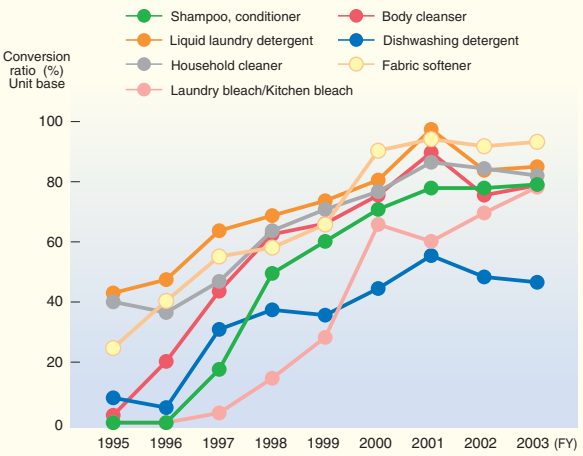
By March 2004, a total of 17 Kao products had undergone improvements through product concentration. Compact ratio of the products for powder and liquid laundry detergents and fabric softener are 100%, 88% and 85% respectively in FY 2003 by number of packaging.

➡ For details, please refer to Data Page 52

Reuse & Reduce of Packaging Materials by Refill & Replacement Products

The Company positively strives to introduce refill and replacement products encouraging our consumers to benefit from the repeated use of packaging. For example, an 85% reduction of plastic consumption is achieved for packaging material of pouch type refill '*Bioré' U*' body cleanser (420 ml) in comparison to the conventional bottle (580 ml). Also waste volume is reduced by 98% between pouch refill and bottle packaging. Since the mid-1990's Kao has made good progress with the introduction of refill & replacement products. By March 2004, 76 Kao products were available in refill format with a further 18 available as replacement. The conversion ratio to refill and replacement products in FY 2003 became 75% (1% increase: year on year base).

◆ **Conversion Rate to Refill/Replacement Products**



As a result of product conversion it is estimated that Kao has reduced plastic consumption by 17,100 tons on the assumption that refill and replacement products sold in FY 2003.

➡ For details, please refer to Data Page 52 to 53

Utilization of Recycled Materials

The Company strives to use recycled materials for product packaging. For example, soaps, hair colors, tooth pastes and bath additives use paper boxes made from recycled materials; whereas the detergent packaging bottles and toothpaste trays use recycled resin for their packaging. Boxes and lids for powdered laundry detergents such as '*Attack*' are made from 100% recycled paper and their measuring spoons are made of 100% recycled polypropylene. A meticulous approach was used to develop the current '*Attack*' packaging, resulting in the carry handle being removed to aid recycling of the used box.

3R's activities Promoted also in Professional Use Products

The 3R principles are also used when developing professional use products. To reduce plastic usage and waste volume, Kao adopted its own molding of thin walled plastic bottles in plant, which are crushable after use. Kao has also been encouraging the collection of large sized bottles for reuse. The collecting ratio in the second half of FY 2003 was 27%. The Company examined reuse of hotel bath amenities such as soap, shampoo and conditioners. By switching those from disposable type to reusable, a 98% waste reduction can be obtained. Kao is now proactively presenting the benefits of switching to reusable products to relevant people and institutions.
Kao's commitment to effective reduction of packaging materials through incorporation of the 3R's principle has resulted in a 13,100 tons increment in FY 2003 (on a year to year basis) due to the introduction of new brands of "*Healthya*" (Healthy tea drink) and "*Asience*" (hair care products) into the market.

➡ For details, please refer to Data Page 52.

Responsible Person's Column

Environmentally-conscious Measures for Packaging Materials

It is generally accepted that waste packaging accounts for 60% of the volume of the total waste generated from the home. As a countermeasure for the reduction of waste volume, the Ministry of Economy, Trade and Industry, the Government of Japan, issued and enforced the "Containers & packaging recycling law"*1 in 1995. Kao regards this as an important task and strives to reduce the packaging materials leading to the downsizing of the waste from home, for instance, reduction of the consumption for packaging material, popularization of refill/replacement products, clear indication on the product for easy garbage sorting, utilization of the recycled material etc. The packing style of the refill pouch using the plastic film is now widely spread however, Kao were faced with a number of challenges at the beginning of the product launch, including usability difficulties and distribution problems due to weak film. To resolve these problems Kao self-developed a special cardboard case for pouch products with corner-strengthened outer cartons and introduced some improvements for easy refilling. Additionally, Kao has improved productivity by developing the automatic filling and packing machine.

The consumers' first experience with the product is through the packaging container and its labeling. Packaging has many functions such as maintaining the product quality or stating usage and warnings etc. Kao realizes the importance of the package's communication function as well as its content. With regard to the future packaging style, we can take it for granted that we will continue to improve the functions of usability, total designing and quality maintenance. I am committed to developing reusable and truly cyclical packaging that will be popular with our consumers and will protect our natural resources for future generations allowing them continued benefits. I would like to develop the technology which will contribute to society.

Kozo Ohira
Packaging Development Research Laboratories

*1 Containers & packaging recycling law: With the aim to recycle the used containers and packaging which occupy more than a half of domestic waste, this law stipulates the roles for consumers, local authorities and companies respectively to sort garbage, collect sorted garbage and to recycle garbage. From 1997, this law was partially enacted for glass and PET bottle and fully enacted in April, 2000 including paper and plastics.

Reducing the Environmental Burden in the Production Activities

Reducing inputs by saving resources and energy directly correlates with reducing outputs such as CO_2 and waste. The Production and Engineering Division sets numerical targets for such reduction, each year striving to improve its performance. This maximizes the benefits to the environment and ensures the safety of consumers and local residents.

Corporate Ethical Guidelines for the Production and Engineering Division (2 of 10 guidelines extracted)

1.Full Responsibilities to Customers:
(1) Observe the Product Liability Law, and develop, produce and supply safe, high quality products.
(2) Proactively exploit safety technology for production and establish quality checking systems to prevent for product liability cases.
(3) Determine the causes of claims, strive to prevent them from recurring and raise the level of technology.

2.Thoroughly Consider the Environment and Safety:
(1) Pursue responsible care activities and work for reconciliation and coexistence with society.
(2) Scientifically assess the impact on the environment and safety of the surroundings, and strive to improve equipment and production processes.
(3) By means of the low environmental burden type manufacturing process, achieving the resources and energy saving, recycling and reduction of the waste amount.
(4) Strive to reduce air pollution, water pollution and the treatment of wastes including overseas subsidiaries.

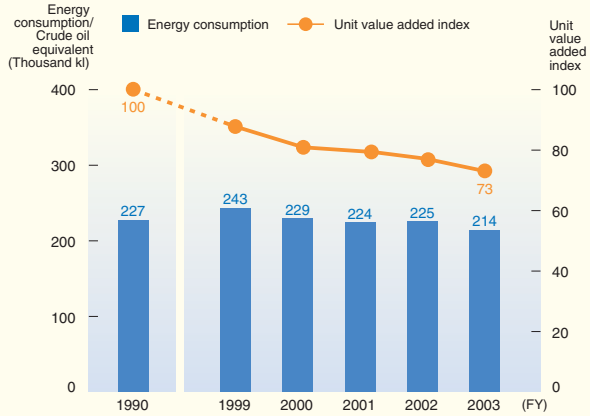
Introduction of Co-generation Contributes to Reducing the Energy Consumption

Kao has been actively installing co-generation facilities*1 at its plants since 1991 as an energy-saving measure. In FY 2003, co-generation facilities were installed at the Kawasaki and Tokyo plants, making a total of 20 co-generation facilities at Kao plants in Japan.
Kao is also pursuing energy saving measures at its plants, e.g. by integrating, combining and eliminating the operation of refrigerators and pumps, installing inverters in pumps and blowers, installing high efficiency motors, and also inverters for fluorescent lamps.
In the future, Kao will focus on the recovery of unused energy and the use of new energy sources such as wind power etc.

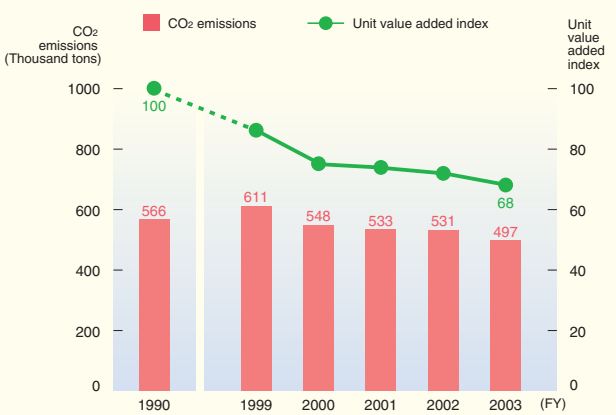
Reducing CO_2 emissions through energy saving and switching fuels

Kao has been able to greatly reduce its CO_2 emissions by reducing the amount of energy it consumes through the installation of co-generation facilities, the pursuit of energy-saving measures, and by switching fuels from crude oil to natural gas.
In the future, Kao will strive to switch the fuel sources to LNG, and utilization of new energy sources such as wind power, 'green electric power' trading system*2.
From FY 2004, Kao is now striving to meet the target levels of greenhouse gases*3 emission, other than CO_2, as specified in the Kyoto Protocol.

◆ Trends in energy consumption in production activities



◆ Trends in CO_2 emissions



Kao Invests 1.8 Billion Yen in Environmental Measures (including Co-generation Facilities for Kawasaki Plant)

In FY 2003, Kao invested around 1.8 billion yen in environmental measures. At a cost of about 500 million yen, the most expensive item was the co-generation facilities at the Kawasaki plant. This was followed by switching the fuels at the Wakayama plant, costing about 100 million yen.

➡ For details, please refer to Page 20

Co-generation facilities at Kawasaki plant

Degrees of Contamination of Air, Water and Soil Meet Legal Requirements

All Kao emission levels of SOx*4, NOx*5, soot and dust to the atmosphere, COD*6 in effluent, and nitrogen and phosphorus discharges were below the statutory stipulated levels.

➡ Trends in emissions levels:
For details, please refer to Data Page 54

On the soil pollution front, Kao has measured to environmental standards for substances in the groundwater at the sites of its Wakayama, Tochigi and Sakata plants according to the usage of chemical substances at these sites in the past.
Kao has also conducted elution and content tests in the soil at the site of its Kawasaki plant. The tests showed no pollution of any sort.

Reducing of Water Consumption & Discharge

Water is also an important resource.
The company uses water as a raw material, water to rinse the equipment when switching product types, processed water for heating steam and cooling water, and tap water for drinking, bath room and other daily use. We have succeeded to save considerable amount of water consumption and also discharge.

➡ Trends in water consumption and effluents.
For details, please refer to Data Page 53

Water purification in Tochigi plant

Extensive Recycling

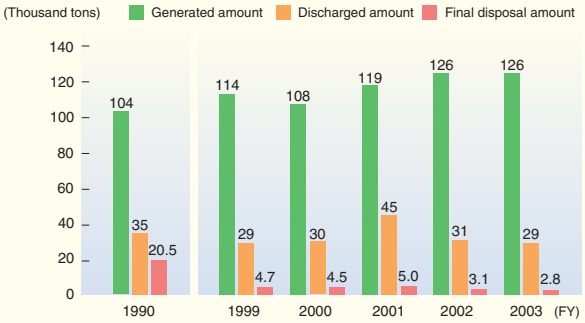
In order to continue producing safe, high quality products, Kao strives to use less of the limited natural resources and to use them more efficiently. If unexpendable wastes were generated in plant which is recyclable in other means, Kao will endeavor to pass these on to other companies.
Kao's recycling arrangements are not yet complete; however, Kao is committed to finding ways to extract the maximum productivity from resources also in the future.

*1 Co-generation: System to generate electricity using city gas, which has low levels of CO_2 emissions, and to make efficient use of the waste heat produced during electricity generation to heat homes and plants etc. Enables considerable improvement in thermal efficiency.
*2 'Green electric power' trading system: System under which the appropriate certifying authority certifies that electricity has been generated from low environmental burden natural energy etc., and that the electricity covered by these certificates is traded. This system allows for a lower environmental load (CO_2 emissions etc.) from the electricity consumed in return for the payment of a fixed levy.
*3 Greenhouse gases: The Kyoto Protocol designated six gases as 'greenhouse gases': carbon dioxide, methane, dinitrogen monoxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.
*4 SOx: Term for oxides of sulfur including SO_2, SO_3 and acid mist in sulfur oxide generated from the combustion of chemical fuels containing sulfur.
*5 NOx: Specifies oxides of nitrogen, including NO and NO_2, generated from the combustion of fuels.
*6 COD: Value representing the amount of oxygen consumed when organic matter in water is broken down by oxidizing agents (potassium permanganate or potassium dichromate). The higher the value, the higher the organic matter levels in the water and the higher the pollution level.

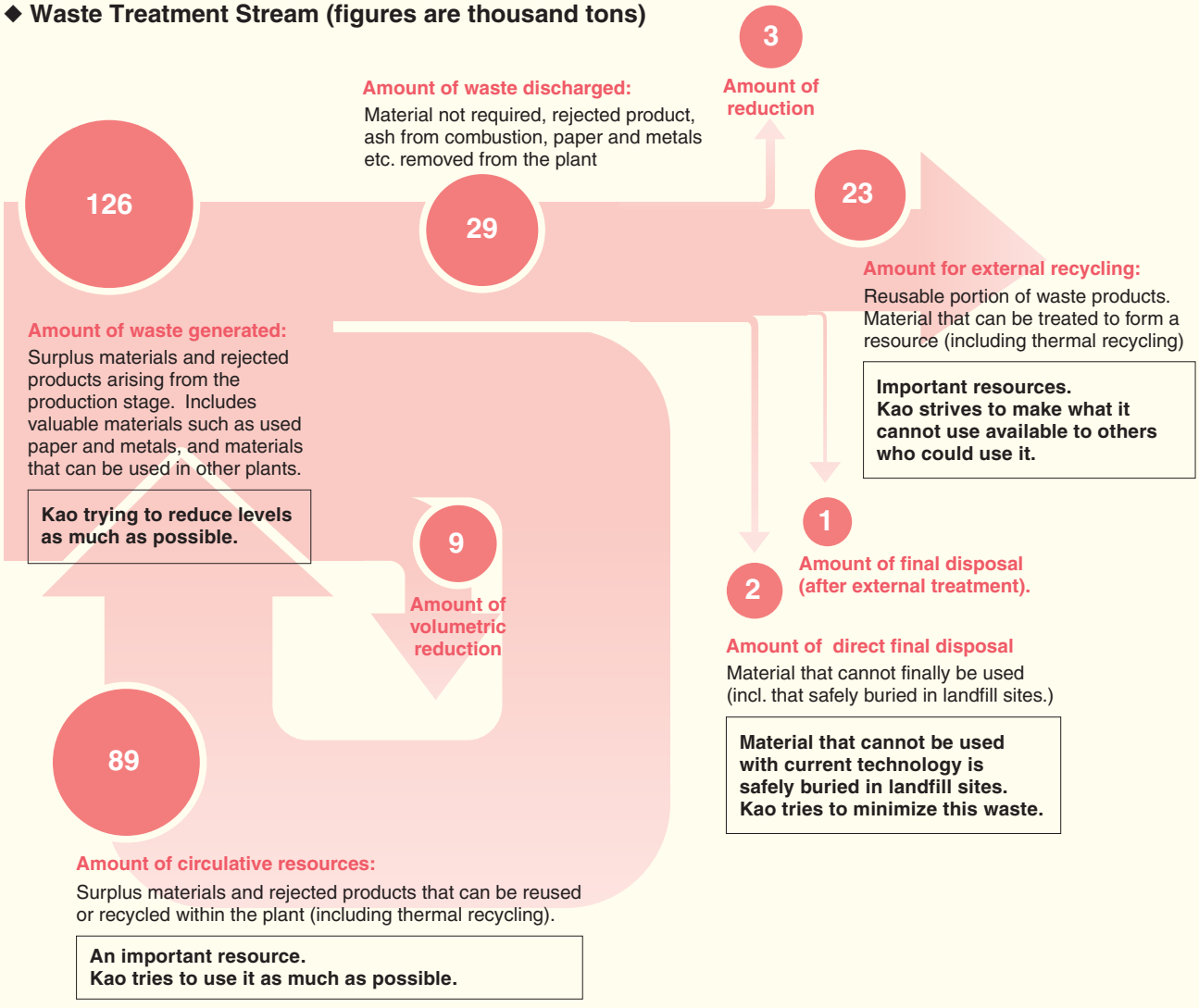
Reducing Final Disposal Amount

It is important to reduce the amount of waste generated, the amount disposed of outside Kao's premises and the amount of final disposal.
In FY 2003, the amount of waste generated was in line with the previous year, but the amount discharged outside Kao was down by 5%. With contributions from Ehime Sanitary Products Company, Limited and the Kao Kawasaki and Kashima plants, which all achieved zero emissions, the final disposal amount was down by 10%.

◆ Trends in Wastes etc.



◆ Waste Treatment Stream (figures are thousand tons)



Promoting Zero Emissions Activities

Kao defines zero emissions as a final disposal of 0.5% or less of the amount of waste generated during the year. That is to say, Kao pursues recycling and reuse with a target of (Final disposal/Amount of waste generated) × 100 ≤ 0.5.

Kao defines zero emissions as 0.5% rather than zero because ash remains behind when waste is incinerated using thermal recycling. If this ash had to be used, there would be increased energy consumption in its transport and treatment, so that the total environmental burden would increase. For that reason, the standard accepts up to 0.5% landfill as a guideline figure. Nevertheless, with the continued progress in waste disposal technology, the standard will have to be reviewed as global technology moves forward.

Management of PCBs

Polychlorinated biphenyls (PCBs) are substances requiring special management regimes. In 1994, Kao collected its holdings of PCBs totaling 4.5 tons, from throughout the organization at its Wakayama plant. Kao reports on the amounts of PCBs held to the authorities on an annual basis. In addition, Kao also reports to the appropriate authorities whenever trace amounts of PCBs are found on any company equipment. These are usually identified by the survey conducted when the equipment is replaced. Kao manages the storage of such equipment appropriately at all of its plants.

Kao will dispose of these PCBs as soon as appropriate methods for disposal have been established.

Compliance with Laws and Bylaws

Kao is continually strengthening its compliance with laws and regulations. Once again this year, Kao has not breached any of the six basic laws on the environment (air, water, noise, vibration, odor and wastes) or any other relevant law.

In relation to plants adjoining residential areas, there have been four complaints from residents e.g., interference with TV reception (at the Wakayama plant). Kao investigates each complaint on site, at this and other plants, as soon as it is received, and attempts to resolve it promptly. Kao takes any complaint from local residents very seriously, and continuously strives to resolve them as soon as possible.

Responsible Person's Column

Pursuing Zero Emissions by Using Incinerator Ash as a Raw Material for Cement

We have been pushing forward with zero emissions work since February 2002. We have targeted a recycling rate of at least 99.5% to bring the amount of landfill down to as close to zero as possible. We are currently looking at every avenue for recycling wastes that would otherwise go to landfill.

The main issue is how to recycle incinerator ash. We have had approaches from nearby businesses, but it is not easy to get alkaline material up to acceptable standards. We have been methodically working through all the possibilities, and as a result, we have found a way of recycling the waste through a smelter company who use it as a raw material for cement.

We had to make modifications to our equipment to meet their required standards, and we began recycling our incinerator ash from April 2003. At the same time, we turned our attention from thermal recycling to material recycling and also to reducing the amount of waste generated (such as by switching from single-use 5 gallon cans to reusable drums).

Switching from landfill to recycling had increased the cost of disposing of wastes, but this is a valuable result from the point of view of the global environment. The issue now is to continue to recycle while cutting the cost of disposing of waste.

Nobuyuki Aida
In charge of environment and safety,
Ehime Sanitary Products Company, Limited

Integrated Management from Procurement to Discharge of Chemical Substances

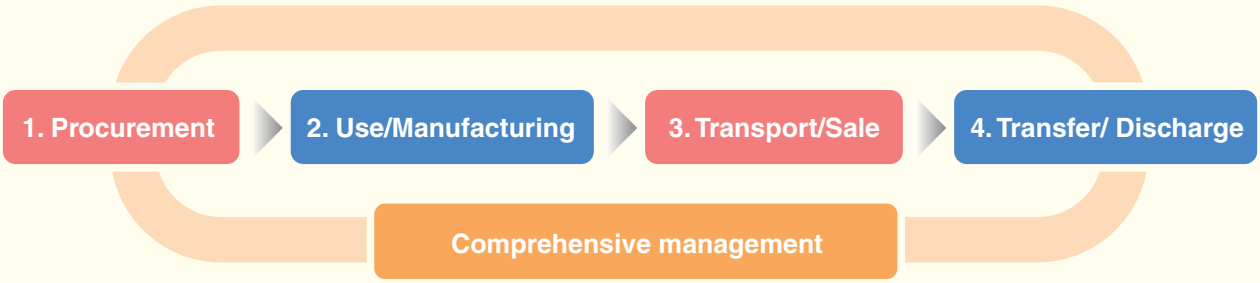
The management of chemical substances affects each stage of the product lifecycle, from the procurement of the raw materials, through their use and manufacture, to distribution and disposal. Kao is experienced in the management of chemical substances. In accordance with the Pollutant Release and Transfer Register (PRTR) Law, Kao issues and uses material safety data sheets (MSDSs) and Yellow Cards. New Integrated Standards on the Comprehensive Management of Chemical Substances were put in place in April 2004, and Kao has begun the procurement of raw materials on that basis ('Green Purchasing').

Integrated Comprehensive Management of Chemical Substances

Kao ships out over 3500 household (including business-related products) and chemical products, and uses around 10,000 types of raw materials. These raw materials are all chemical substances, whether natural or synthetic.
Kao makes risk assessments based on an understanding of the nature of each chemical substance and manages them according to the following procedures, to ensure each is managed appropriately. In the case of industrial chemicals, it is often difficult to establish in detail the potential exposure conditions that consumers may encounter. Accordingly, they are mainly managed on the basis of hazard information.

(1) Hazard information (establishes the dangers of individual substances)
(2) Exposure information (establishes the area, method and amount to be used)
(3) Risk assessment (estimation from the information in (1) and (2) of the probability of the danger eventuating)
(4) Setting of method of use according to the extent of the risk

To support chemical substance management needs, Kao itself has developed a General Chemical Substance Management System based on a system of chemical substance identification codes known as the Master Index (MI), which is used throughout the entire organization. This provides integrated management of every process, from the procurement of the raw materials through to disposal. The General Chemical Substance Management System integrates the MI, the laws and bylaws database, the MSDS generation and search system, the integrated raw material quality information system, and the chemical products proposals system. It contains information on around 18,000 chemical substances, including current products.



1. Procurement – Green Purchasing Starts

When Kao buys raw materials, it has always obtained product quality compliance certificates for raw materials and Material Safety Data Sheets (MSDSs) from the supplier and has managed chemical substances on that basis. However, from April 2004, Kao has paid much closer attention to raw materials' management under its new Green Purchasing policy.
Kao has released its Standards on the Comprehensive Management of Chemical Substances (substances whose use is prohibited and substances whose use is to be reduced) to its suppliers. Suppliers will now have to provide the usual product quality compliance certificates, and also Specified Chemical Substance Contained Information Sheets where necessary. Kao will confirm that raw materials meet the Integrated Standards on the Management of Chemical Substances before buying them.

2. Use/Manufacturing – Standards for use established

When Kao selects chemical substances for use as raw materials in its products, it ranks them into four grades:

- Substances whose use is prohibited: Chemical substances that must not be used in Kao products (PCBs, rock wool, asbestos etc.);
- Substances whose use is to be reduced: Substances targeted for exclusion in future (ozone layer-depleting substances, certain heavy metals etc.);
- Substances requiring careful handling: Substances that require care in handling according to risk profile (substances covered by the PRTR Law*1, substances covered by Poisons and Deleterious Substances Control Law etc.);
- Other substances

3. Transport/Sale – MSDS*2 provided

When Kao sells industrial products, it provides the consignee with an MSDS for each product. MSDSs are supplied in Japanese, with translations into English and European languages available, and where necessary, into Korean and Chinese. Kao provides extensive safety information through the supply of MSDSs and through a system running at each of the distribution centers for the Chemical Business Division that allows MSDSs to be searched over the Internet.
In FY 2003, a total of over 7,000 MSDSs were available, of which nearly 40% were overseas versions.

➡ Lists of numbers of MSDSs prepared:
For details, please refer to Data Page 55

Carrying Yellow Cards*3

Kao educates transport operators on the safe road transport of dangerous and harmful substances, and requires the drivers to carry Yellow Cards. Around 31,000 Yellow Cards are used each year. Kao also began using Container Yellow Cards(labeling style)*4 for small mixed loads of drums and cans; these Yellow Cards show guide numbers (emergency action numbers) and UNID (United Nations ID) numbers.

Yellow Card Sample

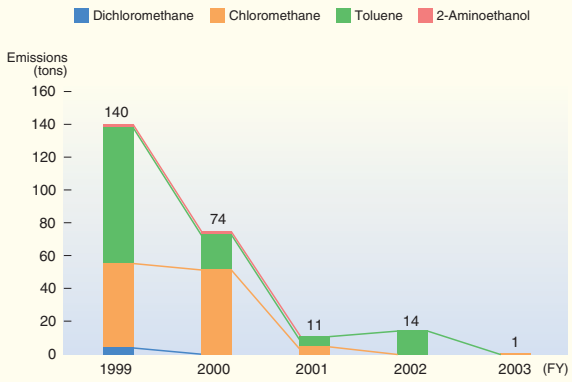
4. Transfer/ Disposal – PRTR

As a whole, Kao uses a total of 172,000 tons of substances subject to the PRTR Law. Total emissions into the atmosphere are 2.6 tons, into public waters 0.5 tons and none into the soil. Kao has set down as policy that "total emissions of individual substances from individual plants are to be reduced to 1 ton or less".
In FY 2002, the Tochigi plant and Ehime Sanitary Products Company, Limited emitted over 1 ton of toluene, but they changed to other substances, and neither plant now emits more than 1 ton of any individual substance. The graph below shows the trends in the emissions of the principal substances into the atmosphere.

➡ Emissions of individual substances:
For details, please refer to Data Page 54

Kao's emissions of chemical substances subject to the PRTR Law will not grow, and Kao will continue to reduce emissions of volatile organic compounds (VOC*5).

◆ Trends in emissions of main chemical substances subject to the PRTR Law



*1 PRTR Law: Abbreviation for Pollutant Release and Transfer Register. The PRTR Law establishes a system of reporting to the government and publishing potentially harmful chemical substances and environmental pollutants emitted and transferred by organizations, intended to inform of and reduce environmental risk.
*2 MSDS: Abbreviation for Material Data Safety Sheet. Data sheets on the safety of individual products distributed by the suppliers of chemical products to businesses that handle and use the chemical products, with the aim of preventing chemical accidents.
*3 Yellow Cards: Cards showing what truck drivers or their near representatives must do in case of an emergency and what assistance is required from the fire and police services, in the event of an accident during the distribution of chemical substances or high pressure gases.
*4 Container Yellow Cards: Emergency information added to the labels of chemical substances with the guide numbers (emergency action numbers) and United Nation's ID numbers indicating the appropriate emergency response measures.
*5 VOC: Abbreviation for volatile organic compounds. Collective term for organic compounds having boiling points between 50° C and 260° C present in the atmosphere. The Industrial Structure Council of the Ministry of Economy, Trade and Industry has proposed 35 substances, and the Japan Chemical Industry Association has proposed 41 substances.

Measures to Reduce the Environmental Burden from Distribution

Kao uses its own logistics systems and GPS, a global network of satellites which supply positioning information, to integrate and achieve overall optimization in distribution. Kao takes into account the environment and safety by evening out its transport modes and proactively addressing transport problems.

Kao's Own Advanced Information Systems for Logistics

Kao has been involved with rationalizing its distribution requirements since the 1960s, establishing its own systems for delivering products to retailers. At Kao, logistics involve using advanced information systems to integrate stock control, ordering and distribution, thus eliminating waste between the factory and retail outlet.

Total Transport Volumes

The distribution flow at Kao can be divided into two broad streams: consumer products and industrial products.
In FY 2003, Kao did 631 million ton-km (mass of goods carried multiplied by distance traveled) in Japan. This breaks down in the following way:

(1) 524 million ton-km for the transport of household products from factories to distribution centers.
It is not possible to ascertain the ton-km involved in transport from the distribution centers to retailers, and from shared distribution centers to retailers, because the distances traveled are not known. From 2003, GPS (Global Positioning System) have been installed in transport vehicles to record distances traveled. This will allow the collection of statistics and optimization of transport.

(2) A total of 107 million ton-km for transport of industrial products from the factories to the distribution centers, and from the distribution centers to the customers, and from the factories directly to the customers.

Impact of Transport on the Environment

The total volumes of gas emissions from transport used by Kao were 89,000 tons of CO_2, 28 tons of SOx and 709 tons of NOx.

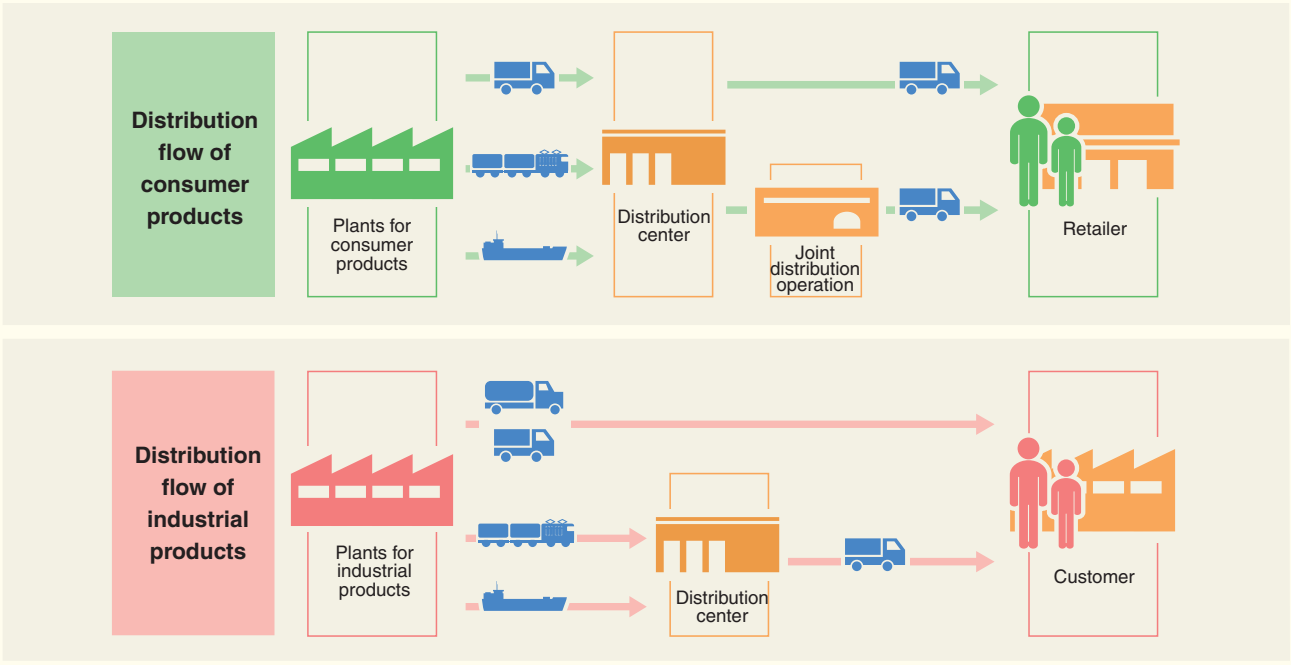
➡ For a breakdown of exhaust discharges by consumer and chemical products For details, please refer to Data Page 55

Provision of Yellow Card Information

Drivers always carry Yellow Cards when transporting industrial products.
The Yellow Cards carry information on the management of transport and inventory, and instructions on what to do in the event of a problem. This is provided to our clients via the Internet.

➡ For details, please refer to Page 31

◆ Conceptual Map of Distribution



FY 2003 Global Highlights

Kao aims to develop its business in its workplaces overseas with a focus on the environment and safety, while maintaining Kao's own internal standards and observing the local laws and customs. Kao also realizes that commitment to the regional community plays a significant role in overseas plants together with a thorough knowledge of foreign cultures.

Developing Business in Partnership with the Local People

The Business Conduct Guidelines on developing business overseas state that Kao will 'respect the cultures of other countries, and conduct its business in compliance with laws and international rules'. Kao always aims to develop its activities with the local people, while understanding and respecting the local environment, culture, practices and people. Kao's Business Conduct Guidelines contain four specific guidelines in this area:

(1) Respect the culture and obey the laws of the countries in which we do business.
(2) Contribute to the development of the economy and life and culture of the country through the development and growth of Kao's business activities.
(3) Train, appoint and promote people from the local society in developing business.
(4) Observe the laws of Japan and the relevant country in export transactions.

Current Topics in Asian Plants

In this section we introduce the topics that are current in Kao's factories around Asia. Asia has a wide diversity of cultures: Kao is working to expand its business while at the same time valuing the traditions and value systems of the individual countries. While Kao naturally takes great care over safety and disaster prevention in its factories to preserve the environment and safety, Kao also places emphasis on contacts with other cultures and participation in local communities.

Fatty Chemical (Malaysia) Sdn. Bhd.

Location: Pinang (Malaysia)
Activities: Manufacture and sales of industrial chemicals derived from palm kernel oil, soaps, lubricants, and plasticizers

Malaysia is a nation where three races live together. We have Malays, Chinese and Indians working in the plant. We also have many migrant workers from nearby, and we use many different languages in the plant. Information is posted on the machinery and equipment in several languages to ensure that it is operated safely. We have established and operate under our own standards on environmental protection which are stricter than those required by the law for smoke and odor, noise and waste water treatment, because the plant is near adjoining commercial and residential areas.

We have set up a SHE (occupational Safety & Health, and Environmental protection) Committee to look after the safety and environmental activities in the factory. Each month, the Committee carries out a safety inspection of the factory in conjunction with the workers and associated companies. We have a Zero Traffic Accident Campaign and conduct greening activities, similar to Japan. With many races working here, we all fit in well with each other, however in an exceptional case, such as the Indians don't wear helmets over their turbans.

We are right beside the famous tourist area of Pinang Island, with its beautiful beach resorts which attract large numbers of tourists. Each time I breathe the fresh air and look at the beautiful waters, I feel a renewed desire to contribute more to the economy and environment in order to protect this natural beauty.

■ **Recipient of "Excellent Advanced Plant Award in fiscal 2003"**

The Pinang plant uses palm kernel oil to produce detergents and shampoos, as well as fatty alcohols which form the raw materials for many derivatives. This plant is one of the largest producers in the world of fatty alcohols. The new facility commissioned in May 2002 uses special Kao catalysts free of hazardous metals. This serves both to reduce the burden on the environment and increase productivity.

Muneki Hirao, Plant Manager of Fatty Chemical (Malaysia)

PT Kao Indonesia Chemicals

Location: Tambun (Indonesia)
Activities: Manufacture, marketing and sales of a variety of industrial surfactants

Indonesia has a population of about 200 million, of whom about 90% are Muslim. Indonesian ways of thinking and value systems are different from those of the Japanese, because their climates and religions are different. However, I believe we must always proceed from a basis of respecting humanity. In terms of work, we strive to build a workplace where the local people don't simply do their own jobs, but can better themselves. We give education and training on environmental and safety activities not only to those staff responsible for them, but also to all our employees so that awareness spreads throughout the workplace and associated companies.

In the factory, we have safety controls in place similar to those in the West, combined with Kao Japan-style practical safety controls. The environment and safety are integral parts of the operation of the workplace and we therefore realize we have an important role as part of the Kao group's overseas chemicals business. Our responsibilities as a chemical plant are particularly heavy, so we place stress on fire training drills as well as planning and policies to prevent accidents.
There have been terrorist incidents by some radical Muslims which have caused a range of concerns in Japan, but the majority of Indonesians are well-disposed toward Japan. Along with the local employees, we aim to build an operation which is world-competitive in production technology.

Nobuo Katahashi, Plant Manager,
PT Kao Indonesia Chemicals

Pilipinas Kao, Incorporated

Location: Cagayan de Oro City (Philippines)
Activities: Manufacture, marketing and sales of chemical products and derivatives made from coconut oil

Pilipinas Kao was established with the aims of "producing and providing a consistent supply of fatty alcohols which form the feedstock for detergents from reusable and recyclable coconut oil, and contributing to the development of the Philippines". The plant is on the island of Mindanao.
The core of industry on the island is plantation agriculture. The Kao plant produces fatty alcohols and also industrial chemicals derived from coconut oil. We have for a long time built up strong and close relationships with local community through the many local employees who have worked here.
On the environment and safety front, we will switch the fuel with less contents of sulfur from summer 2004, to reduce the burden on the environment. We have set up an Environment and Safety Committee within the organizational structure, and we have organized and put up safety and environmental posters in the plant to make all our employees aware and get them involved.
In the local area, Kao has been involved in the planning of coconut planting trials through the funding of an international cooperative group, and is making efforts to stimulate industry in the region.
Kao has recently received approval from PEZA* and is contributing to bringing in yet more foreign currency. In the future, we will maintain good relations with local businesses, increasing their confidence in the factory and its importance to them.

Shuhei Arikita, Plant Manager,
Pilipinas Kao, Incorporated

* PEZA: Philippine Economic Zone Authority. Companies set up in the zone to (in principle) export 100% of production are licensed by the PEZA. Such companies may be 100% foreign-owned and receive extensive preferential treatment.

Kao Chemical Corporation Shanghai

Location: Shanghai (China)
Activities: Manufacture, marketing and sales of a variety of industrial surfactants

Shanghai has long been known to have close ties with Japan. As a commercial center, it is accustomed to having contacts with the Japanese, and there are now over 2,500 Japanese companies in the Shanghai area. While the organization has picked up on the Kao Japan campaign for 5S activities (5S stands for Seiri 'tidiness', Seiton 'order', Seiso 'cleaning', Seiketsu 'cleanliness' and Shitsuke 'discipline'), Kao Shanghai emphasizes the local area and people as far as possible, and is careful not to appear too Japanese in style.

Kao Shanghai has received ISO-14001 accreditation, and we hold regular ISO meetings to publicize policies and targets. However, Shanghai people and the broader Chinese population have little knowledge or experience of safety and environmental issues, and are not accustomed to thinking in terms of foreseeing risk. We are putting efforts into the training of operators through safety groups to overcome this.

China is currently experiencing remarkable growth. Beijing will host the Olympics in 2008. The rapid development has brought a number of environmental issues to the surface, not least an energy shortage. It is my earnest hope that we can make use of the experience, knowledge and technology built up in Japan and gain support from Japan in helping to solve these environmental issues.

Shigenobu Magarida, Plant Manager,
Kao Chemical Corporation Shanghai

Kao (Taiwan) Corporation

Location: Hsinchu (Taiwan)
Activities: Manufacture, marketing and sales of facial cleanser, shampoo, detergents, sanitary napkins, disposable diapers, marketing and sales of chemical products etc.

Taiwan is geographically very close to Japan, and about 30% of foreign visitors to Taiwan are from Japan, but in fact geography makes no difference. In culture, customs and ways of thinking, Japan and Taiwan are similar though different in small ways. Nevertheless, I believe we support each other, even if we don't always see eye to eye in practice. However, with a common cultural foundation, I think we can understand each other sufficiently to advance the business.

The environment is an important national issue in Taiwan, and a law restricting dioxins came into force in January 2004. There are some areas which in fact are still unclear, and we are trying to sort these out with the government. Standardization is going forward in safety, through workplace safety and health, the ISO and OHSAS (Occupational Safety & Health Management System). Understanding of the need for safety is good at the management level, but is still a problem at the plant floor level.

In light of this, we held our first Safety Month last year. We called for suggestions for slogans, and received 273 entries. The winner received an award and was put up on display. We will step up our activities this year, in particular by posting the number of days which are accident-free, work unit by unit, to drive the message home. It is important that this be an ongoing effort, not simply temporary, and that it become embedded into the organization.

Hisato Yasui, Plant Manager,
Kao (Taiwan) Corporation

◆ 2003 Environmental data by Asian plant

1 Zhongshan Kao Chemicals Limited
Location: Zhongshan, China

Activities	Manufacture, marketing and sales of urethane materials for shoes insole
CO_2 emissions	1,142 tons
Amount of waste discharge	407 tons
Amount of final disposal	7 tons
SOx emissions	2 tons
NOx emissions	1> tons
COD emissions	1> tons

2 Kao Corporation Shanghai
Location: Shanghai, China

Activities	Manufacture, marketing and sales of facial cleanser, shampoo, detergent, and sanitary napkins etc.
CO_2 emissions	6,094 tons
Amount of waste discharge	498 tons
Amount of final disposal	1> tons
SOx emissions	1> tons
NOx emissions	4 tons
COD emissions	2 tons

3 Kao Chemical Corporation Shanghai
Location: Shanghai, China

Activities	Manufacture, marketing and sales of a variety of industrial surfactants
CO_2 emissions	5,535 tons
Amount of waste discharge	2,023 tons
Amount of final disposal	1> tons
SOx emissions	1> tons
NOx emissions	8 tons
COD emissions	1> tons

4 Kao (Taiwan) Corporation
Location: Hsinchu, Taiwan

Activities	Manufacture, marketing and sales of facial cleanser, shampoo, detergent, sanitary goods, marketing and sale of chemical products etc.
CO_2 emissions	13,609 tons
Amount of waste discharge	716 tons
Amount of final disposal	260 tons
SOx emissions	3 tons
NOx emissions	3 tons
COD emissions	7 tons

5 Kao Vietnam Co., Ltd.
Location: Bien Hoa (Vietnam)

Activities	Manufacture, marketing and sales of facial cleanser, shampoo, detergent, sanitary napkins. etc.
CO_2 emissions	955 tons
Amount of waste discharge	167 tons
Amount of final disposal	10 tons
SOx emissions	1> tons
NOx emissions	1> tons
COD emissions	1> tons

6 Pilipinas Kao, Incorporated
Location: Cagayan de Oro City (Philippines)

Activities	Manufacture, marketing and sales of chemical products and derivatives made from coconut oil
CO_2 emissions	36,338 tons
Amount of waste discharge	75 tons
Amount of final disposal	1> tons
SOx emissions	49 tons
NOx emissions	– tons
COD emissions	8 tons

7 Kao Industrial (Thailand) Company Limited
Location: Samut Prakarn (Thailand)

Activities	Manufacture, marketing and sales of facial cleanser, shampoo, detergent, sanitary napkins and chemical products, etc.
CO_2 emissions	27,281 tons
Amount of waste discharge	2,256 tons
Amount of final disposal	1,331 tons
SOx emissions	81 tons
NOx emissions	8 tons
COD emissions	10 tons

8 Fatty Chemical (Malaysia) Sdn. Bhd., Kao Soap (Malaysia) Sdn. Bhd., Kao Oleochemical (Malaysia) Sdn. Bhd., Kao Plasticizer (Malaysia) Sdn. Bhd.
Location: Pinang (Malaysia)

Activities	Manufacture, marketing and sales of chemical products made from palm kernel oil, soap, lubricants, and plasticizers
CO_2 emissions	145,943 tons
Amount of waste discharge	4,114 tons
Amount of final disposal	4,108 tons
SOx emissions	310 tons
NOx emissions	178 tons
COD emissions	24 tons

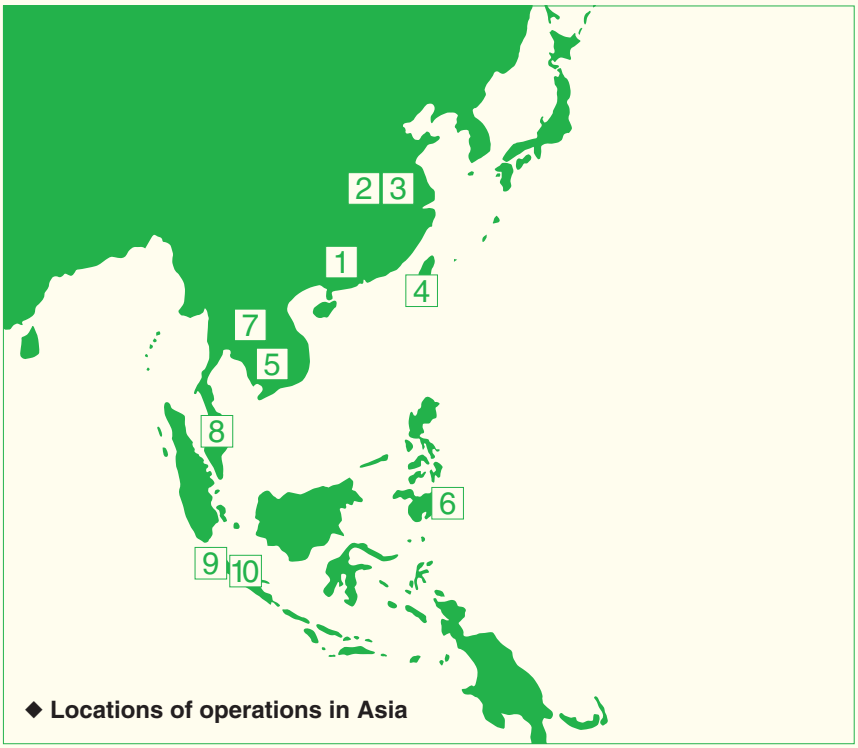
9 PT Kao Indonesia
Location: Cikalang (Indonesia)

Activities	Manufacture, marketing and sales of facial cleanser, shampoo, detergent and sanitary napkins, etc
CO_2 emissions	7,504 tons
Amount of waste discharge	996 tons
Amount of final disposal	– tons
SOx emissions	5 tons
NOx emissions	– tons
COD emissions	1> tons

10 PT Kao Indonesia Chemicals
Location: Tambun (Indonesia)

Activities	Manufacture, marketing and sales of a variety of industrial surfactants
CO_2 emissions	11,363 tons
Amount of waste discharge	877 tons
Amount of final disposal	620 tons
SOx emissions	20 tons
NOx emissions	1> tons
COD emissions	10 tons

Ceremony at commissioning of new plant at Kao (Thailand)



◆ Locations of operations in Asia

➡ ISO-14001 and ISO-9001 accreditation status: For details, please refer to Data Page 52

Kao's Relationship with People

Occupational Safety and Disaster Prevention Form the Foundation of Business Activities

Concern for health and safety in the workplace is the foundation of all Kao's business activities. Accordingly, Kao runs both activities targeting zero accidents to ensure a safe working environment, and disaster prevention training that includes thorough training in apt responses to emergencies and natural disasters.

Minimizing Accidents and Disasters

The basis of safety at work is creating a safe and healthy workplace environment and maintaining safe work practices.
Kao currently conducts a range of safety activities at ten workplaces throughout Japan. Each division has its own health and safety committee, for example, which looks at ways of reducing workplace accidents and job-related illness to near zero, and also improvements to equipment and the work environment. Kao runs regular reporting and communications training, and evacuation drills. This covers disaster prevention activities, fire, oil spills and transport accidents and natural disasters.

Thorough Risk Assessment and Disaster Prevention Systems

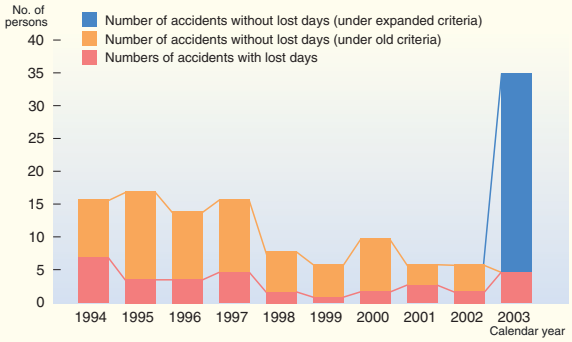
Kao conducts risk assessments under its OSHMS (Occupational Safety and Health Management System) to further extend its work in the area of safety and health. Risk assessments identify all risks that could apply (potential risks), and set priorities based on forecasts of the probability of these events actually occurring and the damage they would cause. OSHMS supports this work.
Kao began developing systems to release data to all employees over the Intranet on the occurrence of workplace injuries and transport accidents. This has now begun to operate. Kao can then use this system when accidents do occur for speedy exchanges between workplaces and for training to prevent secondary accidents.
Prevention of industrial accidents: we have had no explosions, fires or leakages. We conduct general inspections of the safety systems in our factories. We review our broader regional network disaster prevention systems in areas likely to experience major earthquakes and conduct combined disaster prevention training.
We give particular emphasis to investments in safety measures for equipment and earthquake-proofing structures, etc.

➡ Changes in expenditures: For details, please refer to Page.55

Change to Definition of Criteria for 'Accidents without Lost Days'

Five employees in the Production Engineering/Research and Development Division suffered accidents causing them to stop work (one due to injuries from machinery, four due to recoil and falls).
In 2003, Kao expanded the criteria for defining 'accidents without lost days' to include accidents that were not previously regarded as such. As a result, the number of 'accidents without lost days' increased by 30 and the overall number of accidents increased by 35, resulting in more accidents than in the previous year. Under the old criteria, there would have been no 'accidents without lost days'.
Risk assessments have been undertaken throughout the organization since 2001. In this assessment, Kao re-evaluates the potential risks of the machinery and equipment more stringently thus eliminating the considerable potential risks and accidents so far. Kao maintains this stance furthermore to enhance activities.

◆ **Trends in Numbers of Employees Injured in Production Engineering/Research and Development Division**



➡ For trends in occurrence of labor accidents: For details, please refer to Data Page 55

Kao to Increase Confidence in Occupational Safety

Kao will review its equipment safety standards on the basis of ISO-12100, in order to reduce accidents further. The criteria used in risk assessments on machinery & equipment will be further extended to reduce potential risks. Efforts will also go into continuing to raise the awareness of every employee through the use of the incident and accident database, and the training of employees on foreseeing dangers.

Natural Disaster Training Based on Tokyo Metropolitan Area Disaster Plans

There are fears of major earthquakes occurring in the not-too-distant future in the Tokyo, Tonankai and Tokai areas. Therefore Kao has conducted an integrated natural disaster training drill based on the assumption of a natural disaster striking the Tokyo Area.

A Wide Area Countermeasures Division was established in the Kansai Area serving as a central control point for communications as well as for the production, research, sales, distribution and administration divisions based on the scenario of "An earthquake of magnitude 7.2 has struck directly below Tokyo at 10:00 am on September 4. It has been impossible to set up a disaster countermeasures office at the Kayaba-cho, Tokyo head office". A check was then made on the collection of information from the disaster-affected area. The use of natural disaster phones (satellite phones or leased lines) has been added.

On the basis of the findings from the drill, the procedures for setting up the central control in the Kansai Area were reviewed to accelerate the process. Kao will continue to review its planning in order to further improve its natural disaster response across the entire organization.

Experiencing the impact of an earthquake in the earthquake simulator

Hands-on fire hose drill for a fire scenario

Full Check for Better Safety

Recently communities have received news of explosions and fires, and of the falsification of safety records at factories. In response, Kao then conducted a general audit of the safety systems in place at all of its factories. The audit revealed no issues relating to safety. The safety records for high-pressure gas were also inspected, and Kao was able to confirm that there were no legal issues with the records.

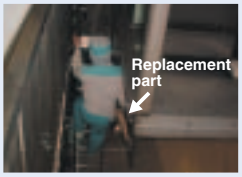
Responsible Person's Column

Improvements made following risk assessments

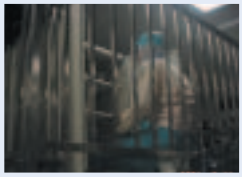
The Sumida complex consists of laboratories, offices and a plant. Our job is to ensure the safety of the entire Sumida complex and the environmental effort there. In particular, we have introduced risk assessments on the contact people make with machinery in the Prestige Cosmetics plant, and on preventing accidents at work.

We had to have the cooperation of the line operators and the people responsible for the equipment in order to expose the potential risks (i.e. jobs involving potential dangers). For this purpose, we created a team composed of staff responsible for managing and promoting safety at the site. We held study groups and conducted numerous discussions before proceeding with the activities.

The photo shows one example of a potential risk. The job required holding parts in one hand while climbing up a ladder set on a platform. There was a risk of falling from the ladder while going up or down it, because of the unstable position involved.



Before improvements



After improvements

We looked at whether we could eliminate the need to climb up and down the ladder carrying the parts. As a result, we placed a rack for the parts on the platform, thus eliminating the need for unsafe climbing up and down and removing the danger. In addition, carrying the parts in an unstable way up and down the ladder could have brought them into contact with the ladder causing them damage and potentially leading to equipment problems too. Therefore the risk assessment not only eliminated risk but also created an improvement in the plant utilization rate and quality. And finally, by getting everyone at the workplace involved, we increased their awareness of safety issues.

We will continue to complete our risk assessments, aiming for even higher levels of safety.

Kazuhiko Kurosu,
Safety & Environment Group,
Sumida office

Human Resources Systems and Activities That Harness the Power and Will to Succeed of the Individual

An organization harnesses the strengths of a diverse range of individuals and demonstrates the combined power of the group. Kao aims to create such an organization. This starts with the individual. For Kao, the task is to develop its people so that they can display their abilities and will to succeed to the full, through a set of systems and programs to train and support the members of the organization.

Equal Partnership Activities to Make Use of Individual Diversity

Twenty-first century society is characterized by ever more diverse values. To survive these changes, the corporate culture must make use of the abilities and will of the individual so that the individual and the organization can grow together.

One aspect of Kao's basic corporate strategy is to develop such a corporate culture. This is reflected in the Equal Partnership (EPS) program that started in 2000. The EPS program involves developing a consciousness and culture of respecting individuality, regardless of gender or nationality, and working together as partners. Three guidelines lie at the core of the program: "respecting diversity", 'becoming completely gender-neutral' and "balancing work and life". Kao continues to roll out the EPS program, taking into account the characteristics of each part of the organization.

The EPS Declaration

- We as individuals respect the diversity of others, and we do not discriminate on the basis of gender, education, race or nationality and so forth.
- We realize that we are equal partners, and we will work together to build a work-friendly workplace which embraces our capacities and will to succeed.

Building a Work-Friendly Workplace by Facilitating the Use of Consultation Service

In FY 2003, 13.7% of employees were women and 1.9% of employees were physically challenged.

Kao provides a system for employees who have problems with work or their personal lives to discuss things with the organization, in order to build a work environment where motivated people are happy to work. The service deals with personnel problems in the workplace, sexual harassment, ethical conduct and other similar matters. Kao also provides external counseling for problems which are difficult to deal with internally, such as problems with life in the workplace, sexual harassment and psychological issues.

Education and Training System Focusing on the Will and Energy of Employees

Kao has a clear "idea of the human resources it requires". Kao conducts education and training on the basis of the following three basic policies for this 'idea of its human resources requirements':

- "Selective education": Human resources are selectively registered and educated in anticipation of needs and changes from a global perspective, to take action for change.
- "Professional human resources training": Training to provide and develop a higher level of skills and knowledge according to the individual's role in the organization.
- "Self-study/investment in oneself": Skills development selected by the individual who is held responsible for completing it.

The different types of training program illustrated below are constructed from these five guidelines.

Kao's Ideal Employees

1. People with an abiding love of challenges
2. People with advanced specialist skills
3. People with a well-developed international perspective
4. People who can work collaboratively to achieve great things
5. People with high ethical standards

◆ **System of Training Programs**

	Organization-wide training (*: Selective training)		Specializations (Professional training)	Self-study (Self-study/investment in oneself)
Senior management level	* **Management candidate programs** • Management issues study groups • Business leader training • Secondments outside the organization	* **Global program**	**Higher level courses** • Secondments outside the organization • Cross industrial association • Specialist schools	**Various self-study programs** • English • PC skills • Business skills • Acquisition of qualifications • Corresponding education
Middle management level	**Management programs** • Leader management training			
Staff level	**Business skills programs** • Step-up training • Follow-up training • Induction training • Pre-induction training		**Basic level courses** • Specialist courses • Basic divisional knowledge	

Support for Child-Rearing and Family Care

A variety of childcare and family support provisions are available to ambitious and talented employees wishing to achieve the correct work-life balance.
Kao provides maternity and child-rearing support through:
- flexible start and finish working times;
- reduced working hours;
- child-rearing leave.

In FY 2003, 13 employees took advantage of reduced working hours and 30 employees used the child-rearing leave entitlement.
Kao also supports employees' ongoing family care needs through:
- flexible start and finish working times;
- reduced working hours;
- family care leave.

During FY 2003, 4 employees took advantage of the family care leave provisions.
In addition to these provisions, employees can also get help to balance family and work commitments through other support services such as home helper subsidies, residential care coupons and nursing service subsidies.

Challenge Program to Support Employee Initiative

In 2000, Kao introduced its 'Challenge Program Scheme'. The scheme provides support to new business and research initiatives proposed by employees. There are two parts to the overall scheme:
- 'Business Development Proposal Scheme'- intended to initiate new internal venture businesses;
- 'Self-Study Proposal Scheme'- supports proposals from employees in areas of investigation or research in which they themselves are interested.

The 'Happy Studio' initiative described later in this report is an example from the Business Development Proposal Scheme.

'Find' - Employee Awareness Survey

Every two years, Kao conducts an employee awareness survey known as 'Find', across the entire organization. The survey consists of four frameworks:
1) Functioning of the Organization
2) Extent of Dissemination of Policies
3) Basic Strengths
4) Level of Satisfaction.

Employees are asked to respond freely to a total of 82 questions. The results of the survey are published throughout Kao, and are used to develop action plans at both departmental and organizational level.

Responsible Person's Column

From commercializing ideas to sales through the 'Happy Studio'

One business development proposal to come out of the first 'Challenge Program Scheme' in August 2001 was the setting up of a Customer Business Development Department that would pioneer products and open up new sales channels that were not covered by the existing operation. Two teams of seven took up the challenge of creating a new business model in which they handled all aspects of product creation from initial product development through to sales.
These are products that will make consumers think, "This is really useful. It's interesting. I like it". They are outside Kao's mainstream production, and so far over ten of them have been launched under the 'Happy Studio' label.

The big difference with this approach is that the team of seven people takes on the entire product chain: purchasing raw materials, production management, distribution, marketing and sales. We think it's a great thing that we can study cutting-edge outsourcing and marketing. The biggest motivation is that we are getting customers to buy our products.

Happy Studio
URL
http://www.happy-kobo.jp/ (only in Japanese)

Hisao Nishiguchi
Customer Business Development Department

Quality Assurance, Quality Improving Activities and Product Safety (from the Consumers' Perspective)

The whole of Kao is united in its efforts to improve and guarantee product quality from the viewpoint of the consumer who will actually use the product. Kao's commitment to quality covers a whole range of aspects: utility, safety, consistency, ease of use, appropriate labeling and provision of information.

Customer to Decide on Quality of the Products

Kao produces household items that are used by a vast range of consumers in a variety of ways. If Kao is to gain trust and support for its products, the customer must regard them as quality products fitting the purpose that the customer actually requires. Not only that: once the consumer has bought our products, we must listen sincerely to what the consumer says about them, and work unceasingly across the entire organization to improve their quality.

Approaches to Quality at the Product Development Stage

The product development process, from the germ of the idea to the design of the final product, is based on scientific investigation. In addition, Kao considers the social science perspective and undertakes practical testing under different conditions and consumer evaluations, to confirm function, performance and ease of use. Kao performs many different quality checks of the raw materials, the container and packaging materials, and the final product, envisaging the consumer buying the product, then using it and finally disposing of it.

Kao runs a number of study groups that cut horizontally across the organization at each stage of the process before a product goes on sale. These take in the business, research, production, purchasing and quality assurance departments as well as the consumer department. This creates a tough consumer-focused testing process to determine whether the final product is going to be received confidently and meet the needs of the customer.

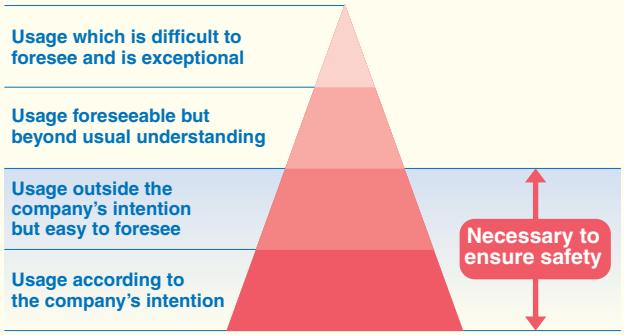
Safety Confirmation

Starting from the development stage, Kao makes assessments of any potential health and environmental effects to confirm the safety of products. Kao has established the "Kao Safety Assessment Standards for Products and Materials". Here we describe the approach Kao takes to evaluate safety and the criteria used to select raw materials.

(1) Basic Approach to Safety Assessment

- Assess and ensure the safety of both raw materials (the composition) and the final products.
- Assure safety to humans and the environment in relation to products under normal conditions of use and with an awareness of potential misuse.
- Safety assessments follow the risk assessment approach, i.e. examine the level of impact ('hazard'*1) of the product on humans and the environment after the normal method of use of the product and the normal quantity used have been established, then make an assessment of the 'risk'*2 from the product to determine whether the product is completely safe to humans and the environment.

◆ **Scope of Responsibility for Product Usage and Safety Assurance**



(2) Safety Assessment Procedures

The procedures followed to assess the safety of household and industrial products are:

a) Consumer products:

- First, confirm that the usage of the product meets Kao standards, and then assign it to one of the three categories to assess safety based on whether new raw materials are used and the results of product testing.
- In the case of products containing new raw materials, the Committee for Safety Assurances conducts a safety investigation into the levels of components and how they will be used. It applies existing knowledge of the impact of the materials on humans and the environment, and if necessary, discusses the results of field trials at the levels that would actually be used, as a final risk-based check.
- For other products, the Safety Assessment Research Center will conduct assessments and final checks of the items listed above.
- No product will reach manufacturing and sales unless these procedures have been completed and the product confirmed as safe.
- The safety of products will be re-assessed after they have been placed on sale through a series of follow-up checks (principally through voluntary PMS*3). The standing members of the Committee for Safety Assurances are representatives from the Consumer Relations Center, the Lifestyle and Culture Research Center, the Research and Development Division and the Quality Assurance Division.

b) Chemical Products

- First, a check is made of whether products pass the safety assessment and comply with legal requirements. Then the General Safety Committee of the Chemicals Group conducts a final safety check of the product. The Committee consists of representatives from the Administration Department, the Planning Department, the International Department and related companies.

Product Labeling

Kao complies with the law and industry standards on labeling to ensure that the consumer can select the correct product and use it safely and with confidence. Kao also conducts inter-departmental checks of labeling before products are placed on sale, with the aim of providing information in a form that the consumer can readily understand.
Labeling also carries appropriate warnings of the potential effects of the misuse or inappropriate use of products as assessed and checked by Kao. The labels carry warnings about the nature of any danger, how to avoid it, and what to do in case of emergencies.

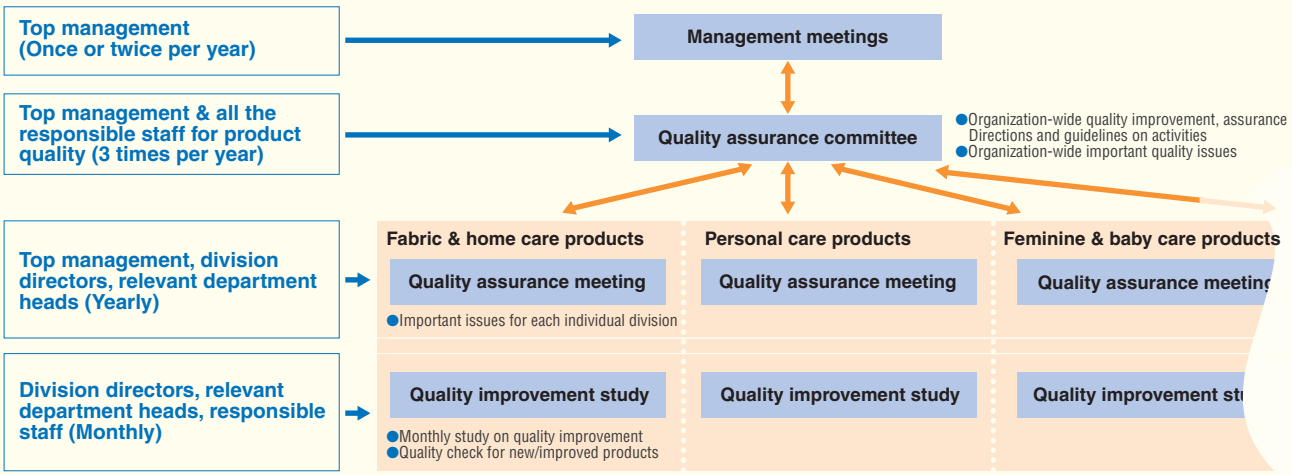
Approaches at Production Stage

Kao calls the first production of a product run after trials have been completed a 'zero batch'. The 'zero batch' is subjected to quality inspection and stability tests in storage, in transport and in use etc. An inter-departmental committee with representatives from across the organization evaluates the results, and if it finds that there are no problems with the 'zero batch', production then begins from Batch 1. Kao has also introduced ISO9000 Series quality control systems.

Company-wide Quality Improvement Activities after Product Release

Once a product has been put on sale, Kao genuinely listens to what its consumers have to say. The Kao Echo System is a database of information from such consultations with consumers. It is used throughout the organization in order to make Kao products even better. When any issues arise, the departments involved will investigate improvements, always aiming to produce better quality products.
All departments take part in the quality management system, which consists of regular meetings of the Quality Improvement Study Groups (one for each business), the Quality Assurance Meetings (one for each business, with participation by top management) and the Quality Assurance Committee (issues for the organization as a whole, with participation by top management). This involves the entire organization in a culture of quality improvement work.

◆ **Company-wide System of Quality Assurance and Improvement Activities**



∗1 Hazard: Potentially harmful (could have undesirable effects)
∗2 Risk: Probability of the occurrence of the effects of a hazard
∗3 PMS: Post Marketing Survey

Creating Better Products by Bilateral Communication with Consumers

Kao responds genuinely to what consumers say, and at the same time provides a range of information. Kao aims to use consumer comments to improve existing products and develop new ones, making communication with consumers the starting point for building complete trust in the organization.

Creating a Consumer-oriented Corporate Culture

Kao established its first consumer affairs department, the 'Nagase Household Science Institute', back in 1934. Since that time, Kao has consistently engaged in two-way dialog with consumers. These days, most of Kao's contact with the consumer comes via its Kao Consumer Information Center and Kao Life Style Research Institute.
The mission of the Kao Consumer Information Center is to offer a direct "ear" to consumers. Kao takes this feedback seriously and reflects consumer concerns in its business activities, aiming to engender trust and loyalty between Kao and its consumers.
Being in direct touch with the consumer, the Center's role is to develop a consumer-oriented corporate culture and to ensure that this continues on into the next generation.

500 Calls a day – 120,000 Calls a Year to Meet Consumer Demand –"Voice" from our consumers–

The Consumer Information Center receives around 500 calls a day, and approximately 120,000 calls a year. The Center's motto is 'Accurate, rapid and kind: it deals with each consumer inquiry from the consumer's point of view, and is responsible for resolving consumer questions and comments.
At the same time, the Center collates and analyzes consumer inquiries to ensure that its staff can always offer the most accurate and appropriate responses to the customer.

System of Utilizing Consumers' "Voice" in Products & Corporate Activities

Kao listens carefully to consumer comments about products and any problems encountered with them, passing this information on to the appropriate department. Here, this information is used in the development and improvement of products, and of the packaging, labeling and advertising of products, as well as in the general organization-wide efforts to improve quality. This contributes to maintaining and improving the Kao brand name.

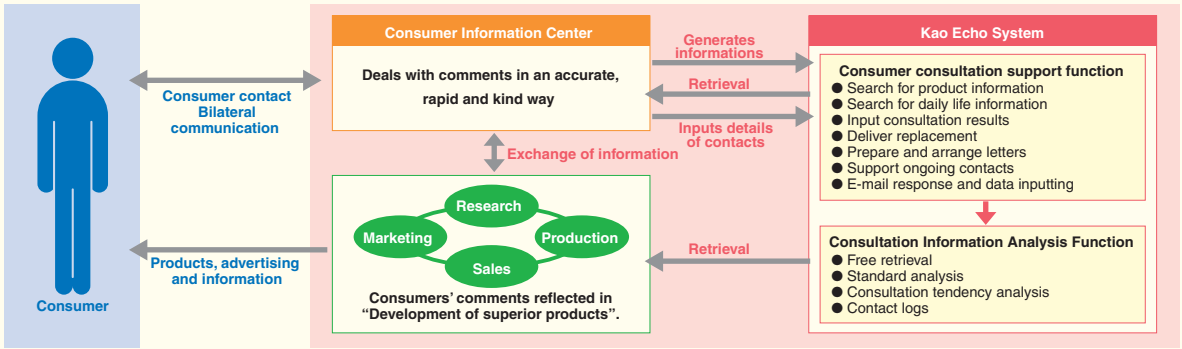
Kao Echo System – Kao's Information Support System

Kao's Echo System has two broad functions: the consultation support function deals promptly and properly with any comments from consumers; the consultation information analysis function distributes the comments to the appropriate department within the organization. Kao staff can easily access and analyze this information, including images, from their personal computers. Comments from consumers are passed on throughout Kao and help in efforts to develop and improve products and quality. Naturally, Kao takes great care with information that would identify individual consumers.

Protection of Personal Information

The Kao database holds a vast amount of personal information on individuals in addition to that obtained from Kao Consumer Information Center, e.g. consumer information from Prestige Cosmetics. This information is a valuable resource for the corporation's business, but Kao recognizes at the same time that it is also important to the customer. In November 2003, Kao established its 'Information Security Policy' and 'Guidelines on Handling Personal Information' to ensure the protection and confidentiality of this data.
Under these Guidelines and Policy, Kao implemented an information protection system across the whole Kao group introducing countermeasures against the misuse or improper circulation of personal data from this system. All Kao employees undergo an education session on maintaining the confidentiality of personal information.

◆ **Kao Echo System-Kao's Information Support System**



Communication Through Internet Website

Kao provides useful consumer information through two websites: 'Kurashi no SOS' ('SOS in daily life') and 'Anzensei – Kankyo Q&A' ('Safety - environment Q&A'). This content is currently available only in Japanese. For Frequently Asked Questions, Kao websites such as 'Saikin no Topics' ('Recent topics') contain a great deal of information about common inquiries and are regularly updated. These websites are part of Kao's ongoing efforts to ensure that relevant information is available to consumers when they need it.

Kao product consumer contact site URL **http://www.kao.co.jp/soudan/ (only in Japanese)**

'Kao's Wonder World for Kids' Offers Fun Learning

In July 2002, Kao launched 'Kao's Wonder World for Kids' on its homepage aimed mainly at higher grade primary school children. It contains a 'Question box of wonder' based on questions submitted by children, which are taken from our daily routines, such as 'I wonder about human hair' and 'I wonder about washing'. Through this, children can learn about 'cleanliness, beauty and health' in our day-to-day lives.
'Kao's Wonder World for Kids' was originally set up with the aim of helping children to do free research on subjects during the summer vacation. We were delighted with the unexpected feedback we received from children: "We never knew there was such a fun site!" Kao now runs the site throughout the year to provide children with enjoyable and useful information. The site received 88,000 hits in FY 2003.

Kao Life Style Research Institute Pursuing 'True knowledge' for a Rich and Happy Life

The Center performs lifestyle research to produce proposals for 'developing superior products' which contribute to 'building a richer and happier life'. The mission of the Center is to 'develop and propagate practical lifestyle information'.
The Center conducts research on lifestyles asking the question: 'Exactly what is a richer and happier life for consumers?' It gathers 'knowledge' about life through exchanges of information with a diverse range of experienced and qualified people together with the relevant industry bodies.

Experts on Research into Living to Predict Future Needs

Kao aims to identify the future lifestyle trends of its consumers through in-depth study into the day-to-day awareness and activities of individuals and families.
Kao performs scientific analysis on the information gathered through lifestyle research. It publishes the information on trends and quality of life on the Internet and through other media. In 2003, Kao updated its website to include family-focused information in a number of sections, e.g. 'Hot Living Information', 'Recipe for Better Living' (covering topics such as washing, cleaning, child-rearing, care & health), and 'Scientific Report on Day-to-Day Living'.
Kao improves the standard of research while also supplying information, e.g. through the publication of surveys and the results of scientific tests conducted before qualified bodies. A summary of the content in the booklet 'Kao Information' is sent to experts and others.

Lifestyle research URL **http://www.kao.co.jp/lifei/ (only in Japanese)**

Semi-permanent Hair Color Product Labeling

Kao received complaints that its semi-permanent hair color was hard to remove if it came into contact with the skin and caused damage to the skin when you tried to remove it.
In response to this, Kao added a statement to the product label saying that stains on the skin would disappear naturally within a few days through normal shampooing and bathing.
Kao's semi-permanent hair color product was launched in 1993. Since 1996, Kao has given away a special stain remover with the product. It has also changed the labeling on the product several times to show more clearly how to remove it from the skin and to warn the user that scrubbing the skin harshly could cause damage.
Knowing that the consumer was concerned that the color might not come off if it came into contact with the skin, helped Kao to address the issue by adding the above information to the product labeling.
This is just one example to demonstrate that Kao closely monitors consumer views about its products even after launching them. Kao's product labeling is subject to change as required.

Labeling explaining how to remove stain from the skin

Promotion of Social and Cultural Activities and Exchanges in Regional Community

Kao engages in social and cultural activities in order to contribute to creating and sustaining a richer and more diverse society. The main purpose of Kao's activities is to promote the education of the next generation in fields such as the arts, the environment, education and the community, and to develop a society free of barriers. This section contains brief descriptions of some of the activities Kao was involved in during FY 2003.

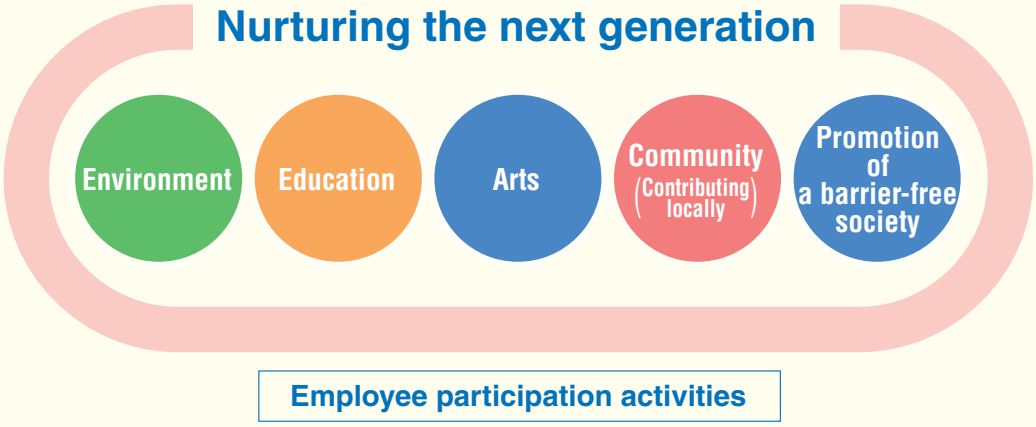
Contribution to Creating a Rich and Diverse Life and Culture

A rich and diverse society encourages businesses to thrive. This is why Kao is actively promoting the education of the next generation.
Kao's mission is: 'To contribute to the complete satisfaction and enrichment of the lives of our consumers and employees throughout the world. We will accomplish this by drawing on our creative and innovative strengths to develop products regarded by the consumer through 'Yoki-Monozukuri*'. This also demonstrates Kao's commitment in the area of social and cultural activities.

* Please refer to Page 8 as of its meaning.

Kao's Guidelines for Community and Cultural Activities

1. Conduct activities that play a role in nurturing the next generation.
2. Conduct activities aimed at contributing to the development of regional communities and culture.
3. Conduct activities that protect and nurture the environment to promote a sustainable society.
4. Conduct activities that promote a barrier-free society as a form of social support.
5. Conduct activities that make effective use of Kao's resources
6. Create an atmosphere in which every employee can participate in community activities as a good citizen.



Environment: Preserving Greenery and Nurturing the Rich Spirit

In the area of the environment, Kao supports activities aimed at the greening of community areas. From 2000, 'Creating Forests for Everyone' is Kao's original greening program run in conjunction with the Urban Greening Foundation. Kao has been assisting 102 citizens' groups and NPOs, and committed to help a further 39 organizations in FY 2003.

Symbol design indicating Kao support for greening project


Activities of recipient party (Kao donated)

➡ For locations of organizations selected for donation: Please refer to the Data Page 55

Kao has also established the Kao Teachers' Fellowships to provide support for teachers to undertake field research overseas, in conjunction with Earthwatch Japan, the local branch of the international NGO, Earthwatch. This program is intended to allow teachers to take part in fieldwork overseas during the summer vacation. They can then put to good use their practical research experience into teaching

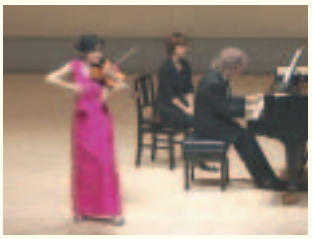

Kao Teachers' Fellowships' activities

Education: Learning Science through the Familiar Kao Products

Kao supports education by conducting 'Hands-on Science Laboratories' using familiar Kao products to encourage children to take an interest in science. Laboratories were held at eight primary, junior high and senior high schools in FY 2003. Kao also conducted a seminar for teachers on 'Surface Science' at one primary school, following a suggestion from a teacher that 'the teaching staff should first learn about everyday Science so that they can make the children enjoy learning about Science'.

Community: Live Music for Communities Hosted at Kao Workplaces

Kao Family Concerts are held at Kao workplaces in order to bring live music to those communities and also to teach about the enjoyment of music and art. This program combines Kao's contributions to local communities with its cultural and social support programs. During 2003, Kao invited violinist Mariko Senju to the Sakata area in Yamagata Prefecture for a 'Kao Family Concert in Sakata'. All the proceeds from the concert were donated to social welfare work in Sakata.



Toward a Society Free of Barriers: Educational Videos Produced by Kao Employee Volunteers

A society where we can all live comfortably regardless of any physically handicapped is a barrier-free society. Working in partnership with the 'Kyouyo-Hin Foundation' (universal design developer), Kao has produced four videos aiming to promote a barrier-free society. During FY 2003, Kao, with the help of staff volunteers, produced a puppet theatre-style video for the younger students in primary schools.

In FY 2002, Kao produced a CD for visually impaired children entitled 'Notes on Your Body – Becoming an Adult', which explains in a simple and thoughtful way the changes that occur in the body at puberty. A revised edition was brought out in FY 2003 and distributed to the 71 blind schools and 91 Braille libraries across Japan. It was also supplied free to the visually impaired and their families, and to those involved in educating the visually impaired.

Social and cultural activities
URL **http://www.kao.co.jp/corp/citizenship**
(only in Japanese)

Heart Pocket Club

The 'Heart Pocket Club' was established in Kao in April 2004. Its purpose is to collect donations from Kao Group employees for social support work. Kao matches any donations the Club makes to social organizations.

Pamphlet of
The Heart Pocket Club

Kao Foundation for Arts and Sciences

Kao set up the 'Kao Foundation for Arts and Culture' in 1990. The Foundation provides extensive support for the arts and culture, particularly for fine arts and music. In 1997, support was also extended to scientific research, and the name of the Foundation was changed to the 'Kao Foundation for Arts and Sciences'. In addition to providing support for the arts and culture, and scientific research, the Foundation also supports general research that covers both the arts and sciences. Up to FY 2003, the Foundation provided financial assistance for 827 cases with a total value of 591.35 million yen.

Plant Events and Activities

Activities in our plants rely on the understanding and support of everyone in the regional community. Kao aims to strengthen relations with all our neighbors through a variety of efforts, particularly in keeping our plants clean and tidy. Kao strives to be a 'good citizen' in each of the locations where it operates.

Sakata Plant:
Clean Up Sakata Harbor Campaign

Sakata Harbor in Yamagata Prefecture has long been a major distribution point, with many ships and large volumes of cargo passing through it. The port is situated at the mouth of the Mogami River, and is also widely used by people from Yamagata as a foreshore amusement place.

On July 19, 2003, a 'Clean up Sakata Harbor Campaign' was run with the local people to clean up Ohama Beach in the Harbor. Thirty employees and five family members from the Sakata plant took part.

Even though the 19th was a showery day, a total of around 240 people drawn from local residents and various organizations put on their raincoats and cleared the beach of rubbish. As a result of their efforts, the beach was completely cleared, and all the volunteers shared in a sense of achievement.

Cleaning up Sakata Harbor

Wakayama Plant:
Ikuyo and Yuko Nakamichi and the Vienna Chamber Orchestra in Concert

Kao's Wakayama plant celebrated its 60th anniversary in 2002. To show its gratitude to the local people, the Wakayama plant co-sponsored a concert with Ikuyo and Yuko Nakamichi and the Vienna Chamber Orchestra on July 3, 2003 (hosted by the Wakayama Prefecture Cultural Promotion Organization).

Education is one of the main themes of Kao's social and cultural activities. This concert of excellent music was seen as a way of 'educating' the next generation. Kao invited around a hundred students from the wind instrument clubs at the neighboring high school and school for the blind, and around 20 children and their carers from the nearby children's home.

The pianist Ikuyo Nakamichi provided brief explanations of the music, which included Beethoven's 'Pastoral Symphony' and Mozart's 'Concerto for Two Pianos K 365'. The concert received rapturous applause.

At the concert in Wakayama

Tochigi Plant:
Summer Vacation Health Seminar

Kao's Tochigi plant produces paper hygiene products including sanitary napkins and diapers. Kao holds 'Summer Vacation Health Seminars' to show all the local people how these paper products are made.

The topic for the seminar on August 23, 2003 was 'Mother and Daughter Physiology and Health'. It was presented by an expert speaker. The seminar was attended by 140 people – 70 pairs of mothers and daughters. It is important for girls from primary school to junior high school to fully understand their physiology as they approach puberty. It is also important for them and their mothers to know how to take care of themselves both physically and mentally.

The mothers and daughters attending the seminar appreciated the talk about matters which are often difficult to discuss directly. Kao will continue to hold similar seminars every year during the summer vacation, to provide an opportunity for frank and open communication between mothers and daughters.

Participants in the Tochigi Summer Vacation Health Seminar

Kashima Plant:
Big Brother's Chat on the Environment

In the Kashima area, local business has a pollution control agreement with the Kamisu and Hasaki districts in Kashima in Ibaraki Prefecture. The Kashima Local Pollution Control Association oversees the agreement. Kao's Kashima plant acts as manager for the business side to the agreement, and has been preparing a seminar for the last two years.

The Association held the seminar on August 8, 2003 to mark the 30th anniversary of the agreement. The title of the seminar was 'Big Brother's Chat on the Environment'. The presenter was Professor Masaru Kitano of Shukutoku University, an environmental expert and also well known as the big brother of Takeshi Kitano, a famous comedian & film director in Japan. Professor Kitano's talk was easy to follow and well received by the 500 or so local people who attended.

Professor Kitano on the lecture

Kawasaki Plant:
Plant Tour and Science Experiments for Parents and Children

The Daishi area surrounding the Kawasaki plant in Kanagawa Prefecture is known as Kawasaki Daishi (famous Buddhist temple). On August 6, 2003, the Kawasaki plant held an open day for parents and children (primary school grade 4 to 6) from the six Eastern districts of the Daishi area.

Firstly, the visitors saw for themselves the processes for producing *Attack* (laundry detergent) and *Humming* 1/3 (fabric softener). After the plant tour, the visitors conducted scientific experiments on surfactants.

How do surfactants deal with grease? The lecture room at the Kawasaki plant was filled with excited voices as the children saw for themselves the chemical changes and the mechanisms that removed the dirt.

This really began to catch the children's interest as something to pursue through their summer vacation, and their parents commented that it would be a great help with the children's homework.

Collaboration between local business and schools will play an important role in training the next generation in science. Kao is considering expanding the experiment further in the future to cover the base in Kawasaki.

How do surfactants deal with grease?

Sumida Complex:
Visitors Asked Not to Smoke While Walking Outside the Complex

Kao's Sumida complex in Tokyo is located next to a residential area, and having been there for 80 years, it has developed strong links to the local community. Every year, the Sumida complex holds a Summer Festival as part of its public welfare activities. Invitations go out both to employees and to the local neighborhood association for all the local residents to take part.

Since 2003, there has been an unusual sight in the reception area of the Sumida complex: signs set out on the tables. They are there because visitors are being asked not to smoke in the street between the complex and the nearest railway station.

The employees at the Sumida complex had already agreed amongst themselves on the ban on smoking while walking in the street. However, there are retail and residential areas on the way from the complex to the nearest railway station. The Company felt that the only way to respond to the wishes of the people around the complex was to also ask the huge numbers of visitors to the complex to cooperate by not smoking in the street.

The Company believes that taking this type of concerted action will further strengthen trust and good relations with the neighborhood in future.

'No-Smoking' request sign at reception

Toyohashi Plant:
'Port Bus Tour' at Harbor Festival

In 1997, the Toyohashi, Gamagori and Tahara ports were merged to form the Mikawa Port. Kao's Toyohashi plant lies in the Toyohashi area of the Mikawa harbor district.

A 'Harbor Festival' was held on July 21, 2003 to commemorate Marine Day. The Toyohashi plant was included in the 'Port Bus Tour' as part of the Festival. Around 300 people took advantage of the tour. Six tours of the plant were organized, each taking 45 minutes with easy to follow explanations of the *Nivea* and *Curel* production lines, which aroused the interest of the children in 'making things'.

A questionnaire distributed after the tour showed that the proportion of repeat visitors is increasing year by year; this year it reached 36%. These tours are intended to familiarize people with Kao through visits to the plant, and demonstrate how interested the local people are in the company. Kao will continue conducting the tours extending their scope in the future.

Curious eyes on the manufacturing line

Environmental Communication

Kao aims to communicate about environmental matters in a more open manner ensuring it discloses accurate information on the environment. It is intensifying its efforts to engage with the wider community outside the organization.

Pioneering Opportunity for Reading Report on the Environment with Stakeholders

Kao held an inaugural reading of the 'Kao 2003 Report on the Environment, Safety and Health' on January 20, 2004. A broad cross-section of the community was assembled, including environmental NPOs, consumer advisers, and university students, for a lively exchange of views. It was facilitated with the assistance of Mr. Hideto Kawakita, representing the IIHOE (International Institute for Human, Organization and the Earth).

The meeting began with a tour of the plant as an introduction to Kao's production activities, and was followed by a summary of the FY 2003 Report from its compiler/editor. Next, the participants offered their own thoughts, views and suggestions. Finally, the meeting considered case studies, including those of other businesses, to brainstorm ideas for improvements.

Main Views on the FY 2003 Report

Some of the responses to the report were: "Too lightweight - the report only covers the surface level…lack of clarity"; "Deflection was observed on the ordinary person's way of thinking and didn't match of their concerns"; "Top official's message is too broad and doesn't reveal Kao's exact position"; "Doesn't really describe how the organization addresses environmental issues and what Kao has done about them"; "Doesn't say what the company is doing or the position of the staff"; "As a consumer of Kao products, I would like to have more information on the environmental burdens at the usage and waste disposal stages".

Some specific suggestions for improvements were: "Put forward the contentious issues more clearly, emphasizing them and addressing them in a balanced way in easily understood language"; "Inform consumers about the environmental and social aspects of Kao's products and services in light of 'Kao Management Principle'"; "Include self-explanatory comparison graphs of targets and achievements by year in the fiscal year summaries"; "Try to produce a report the employees will want to read"; "Use a structure that addresses the reader's concerns".

Participants	
Coordinator	Mr. Hideto Kawakita (Representative of IIHOE)
NPOs	Ms. Junko Edahiro (Chief executive, Japan for Sustainability) Mr. Hiroyuki Sato (Secretary general, Green Purchasing Network) Ms. Yuriko Hamamoto (Director of the Forum for Forest Creating)
Consumer advisers	Ms. Emi Gamo, Tutor, Mejiro University Ms. Chieko Kikuchi, Instructor, Sanno Junior College
University students	Dai Kitamura, Kenta Shimura, Chiyuki Tanimura
Kao	Three employees from Corporate Communications Dept., one from Safety Environment Group, Tokyo plant, and two from Headquarters of Environment & Safety

Venue	Kao Corporation Sumida Office

Response by Kao

This meeting has clarified the issues arising from the use of the Report as a communication tool and highlighted the need for future reports to include relevant and easily understandable information.

Kao is aware that it needs to do more work on presentation to make the report more user-friendly.

Kao has taken on board the views and impressions expressed at the meeting. It will try to include more information on social aspects, and to be clearer and more specific about what Kao does by using real examples and showing you the faces of our employees who are actually responsible for the work.

Kao will continue to provide ample opportunity for exchanges of views with a wide variety of people in order to further improve its communications.

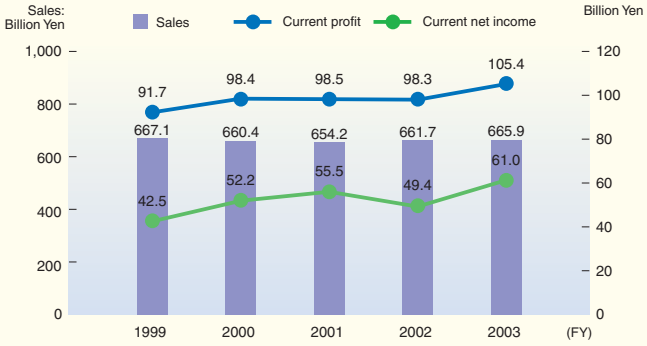
◆ In this Report the following actions were taken in response to suggestions:

Suggestion	Typical examples of responses
Enable to see the faces and activities of responsible employees	• Introduced four Responsible Manager columns • Newly established Overseas Topics sections • Short descriptions of interactions between plants and local communities
Provide a digest of the contents	• Highlights of the activities included in the first half
Structure the Report to reflect the level of interest to the readers	• We have followed a basic Title → Summary → Text format, which lets the reader read further according to their level of interest
Position of explanation of terms	• Included on the same page
Show the results of questionnaires	• The results of the previous year's questionnaire are printed on the back of this year's questionnaire form (Only for Japanese version)

Data

Company Outline

◆ Trends in Nonconsolidated Sales and Income



◆ Trends in Nonconsolidated Numbers of Employees

(Number of employees at end of year)

(FY)

	1999	2000	2001	2002	2003
Number of employees	6,086	5,747	5,744	5,717	5,724

Table for Status of ISO Attainment (Overseas)

◆ Status of ISO Attainment (as of December 2003)

ISO14001

(Date of attainment)

- Kao (Taiwan) Corporation ..... September 1998
- Kao Chemicals GmbH ..... May 2001
- Kao Corporation Shanghai ..... June 2002
- Kao Chemical Corporation Shanghai ..... June 2002
- Kao Corporation S.A. ..... February 2003
- Kao Specialties Americas LLC ..... March 2003

ISO9001

Chemicals (Date of attainment)

- Quimi-Kao, S.A. de C.V. ..... March 2001
- Kao Corporation S.A. ..... July 2001
- Kao Chemicals GmbH ..... August 2001
- Kao Specialties Americas LLC ..... May 2002
- Kao (Taiwan) Corporation ..... September 2002
- PT Kao Indonesia Chemicals ..... May 2003
- Pilipinas Kao, Incorporated ..... June 2003
- Kao Chemical Corporation Shanghai ..... June 2003
- Fatty Chemical (Malaysia) Sdn. Bhd. ..... August 2003
- Kao Industrial (Thailand) Co.,Ltd ..... November 2003

Personal Care

- Kao Corporation Shanghai ..... March 2003

Fabric and home care

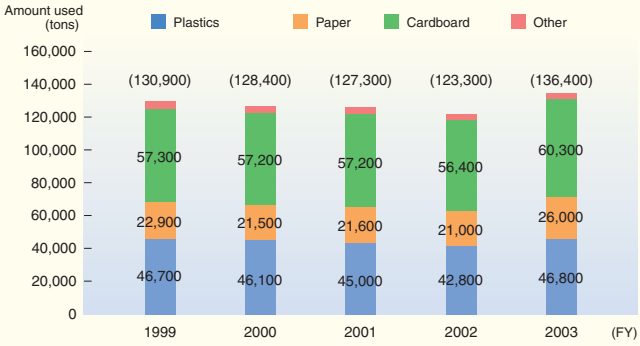
- Kao (Taiwan) Corporation ..... September 2002
- Kao Corporation Shanghai ..... March 2003
- PT Kao Indonesia ..... November 2003

Feminine and baby care

- Kao (Taiwan) Corporation ..... September 2002
- Kao Corporation Shanghai ..... March 2003

Packaging

◆ Trends in the Amount of Packaging Materials Used



◆ Compact-type Products (as of March 2004)

Classification	Total No. of items	Compact-type products		
		No. of items	Rate* (%)	Product names
Powder laundry detergent	4	4	100	*Attack*, *Attack* with Bleach, *Attack* Sheet-type, *New Beads*
Liquid laundry detergent	4	2	88	*Attack* liquid, *Emal* delicate wash
Fabric softener	6	4	85	*Humming 1/3*, *Humming 1/3* – floral, *Humming 1/3* antibacterial Plus, *Humming Flare*
Laundry bleach	5	1	18	*Haiter 1/2* for colors
Dishwashing detergent	7	6	85	*Family* herbal scent-concentrated, *Family* concentrated, *Family* mild-type, *More* easy for hands – concentrated, *Family Power Gel*, *Family Kyukyutto*

* Rate: unit-based percentage of compact-type products sold, to total units sold within the product category

◆ Replacement Products (as of March 2004)

Classification	Total No. of items	Replacement items		
		No. of items	Conversion rate*	Product names
Household cleaner	19	5	60	*Haiter* mildew remover, *Haiter* mildew remover strong, *Magiclean* handy spray, *Magiclean* power liquid for toilets, *Mypet* for shine
Kitchen bleach	3	1	64	*Haiter* foam
Drain cleaner	1	1	72	*Kitchen Wonder* drain slime remover
Semi-permanent hair color	10	10	63	*Blauné (8)*, *Blauné* for men *(2)*
Hygienic care	4	1	74	*Sanina*

* Conversion rate: unit-based percentage of replacement products sold to total units sold for which replacement products are available

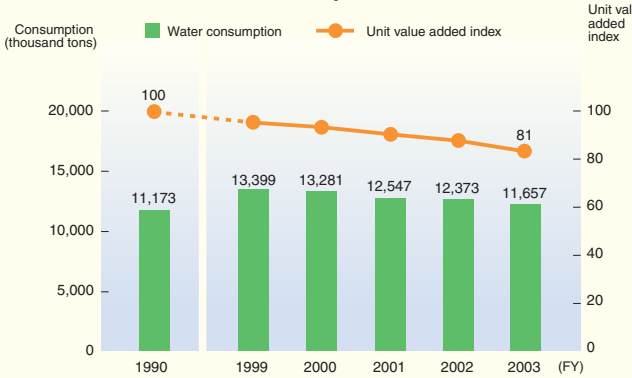
◆ Refill Products (as of March 2004)

Classification	Total No. of items	Refill products		
		No. of items	Conversion rate*	Product names
Laundry detergent	4	4	83	*Attack* liquid, *Attack* spot cleaner, *Emal* delicate wash, *Attack* spray foam pre-care
Fabric softener	6	4	91	*Humming 1/3*, *Humming 1/3* – floral, *Humming 1/3* – anti-bacterial Plus, *Humming Flare*
Laundry bleach	5	3	78	*Haiter* wide, *Haiter* for colors, *Haiter 1/2* for colors
Starch	3	3	76	*Smoother*, *Keeping*, *Keeping* for machine washing
Dishwashing detergent	8	7	47	*Family* herbal scent – concentrated, *Family* concentrated, *Family* , *More* easy for hands – concentrated, *Family* mild, *Family Power Gel*, *Family* for dishwasher
Household cleaner	22	10	81	*Family* sink cleaner, *Mypet* handy-spray, *Mypet* glass cleaner-liquid type, *Magiclean* multi-purpose, *Magiclean* bath cleaner-foaming spray, *Magiclean* deodorizing toilet cleaner, *Family Pure* kitchen cleaner, *Allerclean* home hygiene spray for bedding and pillows, *Allerclean* home hygiene spray for carpets, tatami mats, and sofas
Kitchen/household paper products	9	4	87	*Quickle* kitchen wipes, *Quickle* wipes for gas oven, *Quickle* toilet wipes, *Quickle* wipes for carpets
Pet care	11	1	72	*Kao Pet Care* wet tissues
Body cleanser	7	6	78	*Bioré U* powder-in, *Bioré U* (4), *Bioré U* cream-in
Shampoo/conditioner	16	5	77	*Merit* shampoo, *Merit* conditioner, *Merit* two-in-one shampoo, *Essential* damage care shampoo, *Essential* damage care conditioner
Facial care sheets	12	2	50	*Bioré* makeup remover – cotton wipes, *Bioré* eye makeup remover
Body care sheets	4	4	57	*Bioré* deodorant powder sheets (3), *Bioré* deodorant powder sheets for men
Hair styling agents	39	7	48	*Success* morning hair water – gel water, *Success* morning hair water – hair smoothing mist, *Lavenus* hair water, *Liese* mint shower, *Liese* straightening foam, *Liese* perm-emphasizing foam, *Liese* moisturizing foam
Bottom wipes	3	3	83	*Merries* cotton-touch bottom wipes, *Merries* toilet disposable bottom wipes, *Relief* toilet-disposable wipes
Bath additives	21	2	56	*Emolica* (2)
Hygienic care	4	1	85	*Sanina* toilet paper
Prestige cosmetics	135	10	79	*Sofina* fine fit refill, *Sofina* fine fit face powder refill, *Sofina* fine fit complete coverage type refill, *Raycious* gradation powder refill, *Raycious* ray blend powder refill, *Grace Sofina* foundation refill, *est* the powder makeup refill, *est* retouch loose powder refill, *AUBE* eyeliner pencil cartridge, *AUBE* eyebrow pencil cartridge

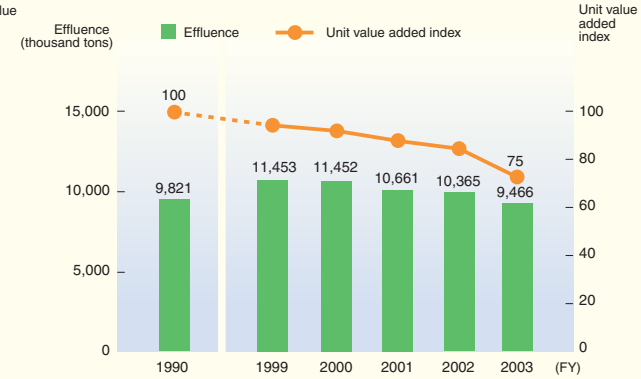
* Conversion rate: unit-based percentage of refill products sold, to total units sold for which refill products are available

Environment and Chemicals

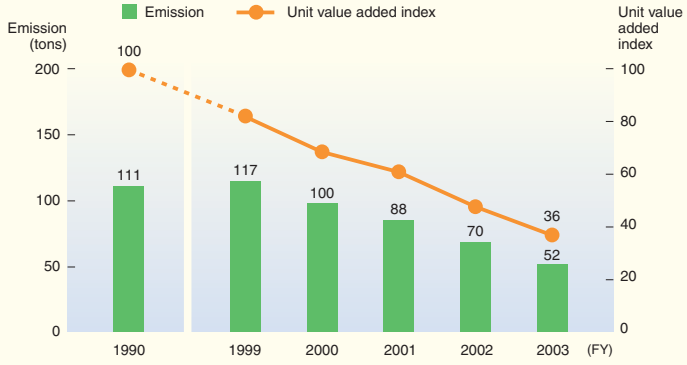
◆ Trends in Water Consumption



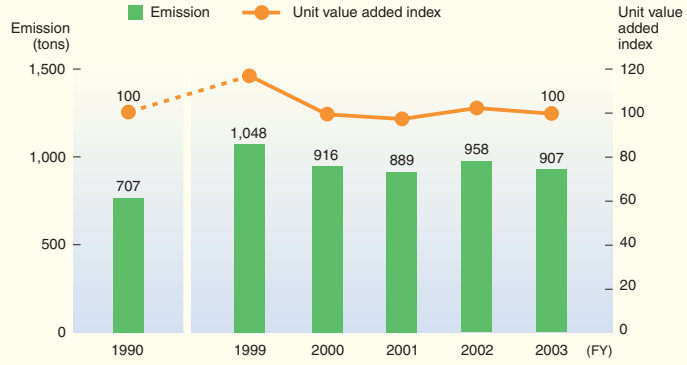
◆ Trends in the Amount of Effluents



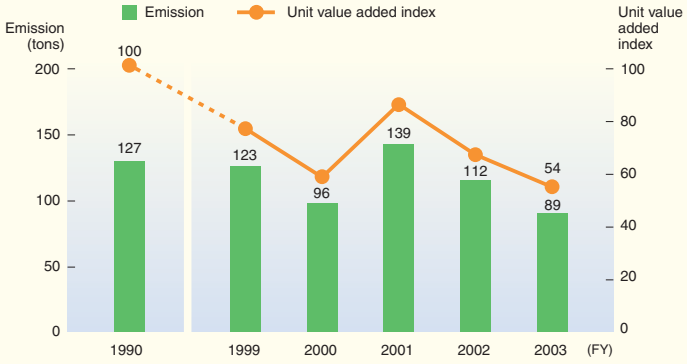
◆ Trends in SOx Emission



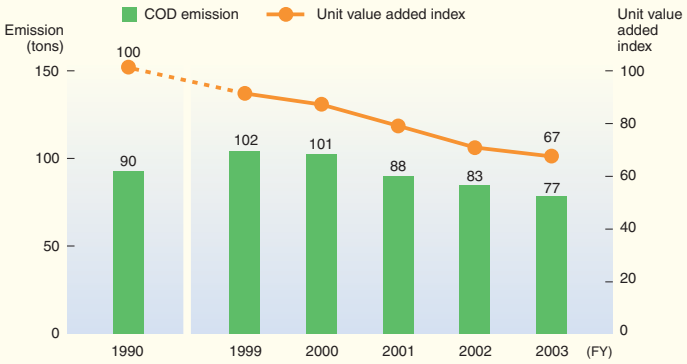
◆ Trends in NOx Emission



◆ Trends in Soot and Dust Emission



◆ Trends in COD Emission



◆ Emission Levels of Substances Subject to PRTR law (FY 2003)
Substances Whose Annual Use Levels in Each Plant Were Over 1 ton

(tons / year)

Cabinet Order No.	Name of substance	Amount of emissions to atmosphere	Amount of emissions to public waters
1	Water-soluble zinc compounds	0.0	0.3
3	Acrylic acid	0.0	0.0
4	Ethyl acrylate	0.0	0.0
6	Methyl acrylate	0.0	0.0
7	Acrylonitrile	0.0	0.0
16	2-Aminoethanol	0.0	0.0
17	N-(2-Aminoethyl)-1,2-ethanediamine; Diethylenetriamine	0.0	0.0
21	m-Aminophenol	0.0	0.0
23	1-Allyloxy-2,3-epoxypropane	0.0	0.0
24	n-Alkylbenzenesulfonic acid and salts (alkyl C = 10-14)	0.0	0.0
28	Isoprene	0.0	0.0
29	4,4'-Isopropylidendiphenol; Bisphenol A	0.0	0.0
40	Ethylbenzene	0.0	0.0
42	Ethylene oxide	0.1	0.0
43	Ethylene glycol	0.0	0.0
46	Ethylenediamine	0.0	0.0
54	Epichlorohydrin	0.0	0.0
56	1,2-Epoxypropane; Propylene oxide	0.5	0.0
58	1-Octanol	0.0	0.0
63	Xylene	0.0	0.0
65	Glyoxal	0.0	0.0
68	Chromium and chromium (III) compounds	0.0	0.0
80	Chloroacetic acid	0.0	0.0
95	Chloroform	0.1	0.0
96	Chloromethane; Methyl chloride	0.5	0.0
102	Vinyl acetate	0.0	0.0
145	Dichloromethane; Methylene dichloride	0.1	0.0
166	N,N-Dimethyldodecylamine N-oxide	0.0	0.0
176	Organic tin compounds	0.0	0.0
177	Styrene	0.0	0.0
205	Terephthalic acid	0.0	0.0
207	Copper salts (water-soluble except complex salts)	0.0	0.1
224	1,3,5-Trimethylbenzene	0.0	0.0
227	Toluene	0.3	0.0
231	Nickel	0.0	0.0
232	Nickel compounds	0.0	0.1
243	Barium and its water-soluble compounds	0.0	0.0
251	Bis-(hydrogenated tallow)-dimethylammonium chloride	0.0	0.0
254	Hydroquinone	0.0	0.0
264	m-Phenylenediamine	0.0	0.0
266	Phenol	0.0	0.0
270	di-n-Butyl phthalate	0.0	0.0
273	n-Butyl benzyl phthalate	0.0	0.0
283	Hydrogen fluoride and water-soluble salts	0.0	0.0
292	Hexamethylenediamine	0.0	0.0
297	Benzyl chloride	0.0	0.0
298	Benzaldehyde	0.0	0.0
300	1,2,4-Benzenetricarboxylic 1,2-anhydride	0.0	0.0
304	Boron and its compounds	0.0	0.0
307	Polyoxyethylene alkyl ether (alkyl C=12-15)	0.9	0.0
308	Poly(oxyethylene) octylphenyl ether	0.0	0.0
309	Poly(oxyethylene) nonylphenyl ether	0.0	0.0
310	Formaldehyde	0.0	0.0
311	Manganese and its compounds	0.0	0.0
313	Maleic anhydride	0.0	0.0
314	Methacrylic acid	0.0	0.0
318	2-(Dimethylamino) ethyl methacrylate	0.0	0.0
320	Methyl methacrylate	0.0	0.0
Total		2.6	0.5
179	Dioxins (unintentionally formed substances, units: mg/year)	4.9	0.8

◆ Numbers of MSDSs (Material Safety Data Sheet) Prepared

	Prepared in FY 2003			Cumulative total
	New	Revised	Subtotal	
Japanese version	416	743	1,159	4,556
English translations	237	558	795	1,970
US editions	41	21	62	480
European editions	44	19	63	292
Total	738	1,341	2,079	7,298

◆ Distribution (levels of exhaust emissions by transport mode)

(1) Consumer products

Transport mode	Volume (million ton-km)	CO_2 (tons)	SOx (tons)	NOx (tons)
Truck	383	68,827	22	481
Railway	87	1,915	–	93
Sea freight	54	1,991	1	14
Total	524	72,733	23	587

(2) Chemical products

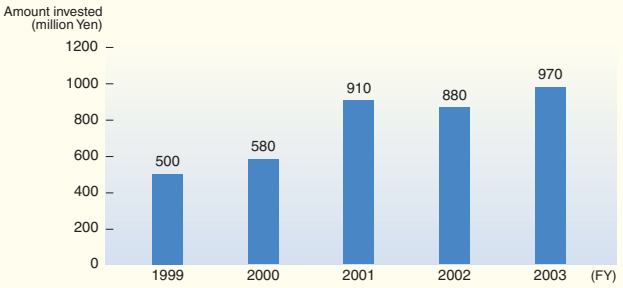
Transport mode	Volume (million ton-km)	CO_2 (tons)	SOx (tons)	NOx (tons)
Truck	86	15,439	5	108
Railway	10	228	–	11
Sea freight	11	395	0.1	3
Total	107	16,061	5	122

- CO_2 is calculated from emissions factors in 'Distribution in Figures' (Published by Japan Federation of Distribution Organizations).
- SOx is calculated from sulfur in fuels.
- NOx is calculated from factors from EcoAction21*

* EcoAction21: Environmental activity evaluation program established by the Ministry of the Environment and directed at small to medium enterprises; provides methodologies for setting targets for businesses for their effects on the environment, how to act, and collecting, evaluating and reporting the results.

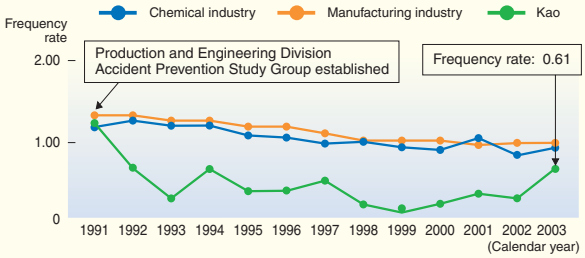
Safety and Disaster Prevention

◆ Trends in Investment in Occupational Safety and Disaster Prevention Measures



* The amount invested is defined as 'capital investment made in depreciable assets', corrected back to previous years

◆ Trends in Occurrence of Labor Accidents (Frequency rate more than 1 day leave)

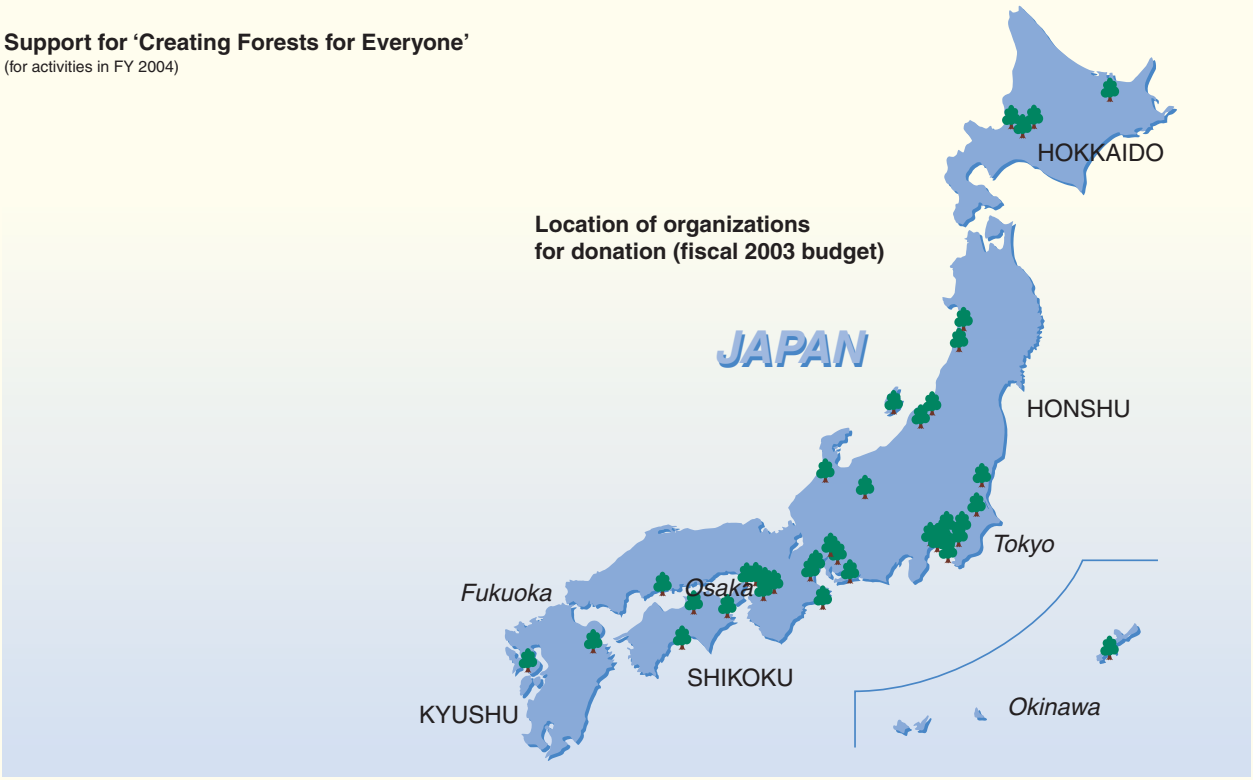


Frequency rate : Numbers of deaths and injuries due to labor accidents per million hours worked

Exchanges with the local community

◆ Support for 'Creating Forests for Everyone'

(for activities in FY 2004)



Data of Environmental Burden Loaded by Plant

As to the chemical substances subject to the PRTR, only dioxin and the substances whose amount of emission exceeds 1 ton are the scope of indication on this table.
However, all the plants have no chemical substances subject to PRTR whose amount of emission exceeds 1 ton.

Wakayama Plant

1334 Minato, Wakayama-shi, Wakayama 640-8580 Japan Tel: +81-73-423-8151 Plant area: 425,000m^2

● Production items in FY 2003 etc.
Laundry detergent, Fabric softener, Bleach, Dishwashing detergent, Household cleaner, Body cleanser, Shampoo/conditioner, Soap, Toothpaste, Surfactant, Fatty chemical product etc, Fundamental research and research for commercialization

Classification	FY				Unit: tons
	1999	2000	2001	2002	2003
Total production output	683,321	755,387	733,964	778,295	787,309
CO_2 emission	292,805	252,312	237,238	236,298	214,573
Waste generated	59,927	59,949	54,750	59,367	59,351
Waste discharged	8,070	9,644	10,170	9,675	9,791
Final disposal for landfill	2,824	3,009	3,027	2,014	2,066
SOx emission	35	27	23	26	24
NOx emission	352	286	287	335	284
COD emission	80	79	70	66	64

Emission of substances subject to the PRTR law (FY 2003)				
Cabinet order number	Name of substance	(Unit)	Air	Public water
179	Dioxin	(mg)	2.5	0.8

Tokyo Plant

2-1-3 Bunka, Sumida-ku, Tokyo 131-8501 Japan Tel : +81-3-5630-9000 Plant area: 42,600m^2

● Production items in FY 2003 etc.
Face washer/makeup remover, Prestige cosmetics, Research for commercialization

Classification	FY				Unit: tons
	1999	2000	2001	2002	2003
Total production output	4,835	5,221	4,870	4,872	4,575
CO_2 emission	13,451	12,200	11,568	11,466	10,943
Waste generated	1,385	2,141	1,758	1,783	1,578
Waste discharged	1,385	2,141	1,757	1,783	1,578
Final disposal for landfill	651	161	75	59	49
SOx emission	1>	1>	1>	1>	1>
NOx emission	1>	1>	1>	1>	1>
COD emission	1>	1>	1>	1>	1>

Emission of substances subject to the PRTR law (FY 2003)				
Cabinet order number	Name of substance	(Unit)	Air	Public water
There are no facilities subject to the special law concerning countermeasures against dioxin				

Because effluence containing COD drains to public sewage, data for COD reflects subtraction at the sewage treatment plant based on the subtraction rate.

Sakata Plant

2-1-18 Ohama, Sakata-shi, Yamagata 998-0064 Japan Tel: +81-234-34-5511 Plant area: 141,000m^2

● Production items in FY 2003 etc.
Pore packs, Bath additives etc.

Classification	FY				Unit: tons
	1999	2000	2001	2002	2003
Total production output	85,608	72,796	36,058	19,166	20,702
CO_2 emission	22,824	21,624	13,767	8,638	9,419
Waste generated	2,901	1,860	1,647	2,434	4,686
Waste discharged	2,900	1,860	1,647	1,409	1,800
Final disposal for landfill	208	258	219	250	392
SOx emission	51	43	26	5	5
NOx emission	37	40	45	53	76
COD emission	2	1	1>	1>	1>

Emission of substances subject to the PRTR law (FY 2003)				
Cabinet order number	Name of substance	(Unit)	Air	Public water
179	Dioxin	(mg)	0.1>	0.1>

Kawasaki Plant

1-2 Ukishima-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-0862 Japan Tel: +81-44-266-3231 Plant area: 101,000m^2

● Production items in FY 2003 etc.
Laundry detergent, Fabric softener, Bleach, Dishwashing detergent, Household cleaner, Body cleanser, Shampoo/conditioner etc.

Classification	FY				Unit: tons
	1999	2000	2001	2002	2003
Total production output	368,151	368,760	391,789	397,450	383,753
CO_2 emission	61,921	64,097	71,665	74,108	67,163
Waste generated	2,655	4,560	19,438	19,751	18,003
Waste discharged	2,655	4,560	19,438	5,495	4,176
Final disposal for landfill	0	132	760	198	17
SOx emission	1>	1>	1>	1>	1>
NOx emission	19	13	17	23	18
COD emission	4	4	3	2	2

Emission of substances subject to the PRTR law (FY 2003)				
Cabinet order number	Name of substance	(Unit)	Air	Public water
179	Dioxin	(mg)	0.1>	0.1>

Tochigi Plant

2606 Akabane, Ichikai-machi, Haga-gun, Tochigi 321-3497 Japan Tel: +81-285-68-7000 Plant area: 186,000m^2

● Production items in FY 2003 etc.

Paper cleaning products, Sanitary napkins, Baby diapers, Adults' diapers, Aroma chemicals etc. Fundamental research and research for commercialization

Classification	FY				Unit: tons
	1999	2000	2001	2002	2003
Total production output	54,484	63,153	54,991	55,150	51,071
CO_2 emission	54,288	54,308	52,508	53,503	49,204
Waste generated	8,624	8,075	7,670	8,161	7,242
Waste discharged	3,998	3,902	3,714	4,828	3,811
Final disposal for landfill	526	256	184	75	125
SOx emission	8	9	18	16	14
NOx emission	319	300	344	437	418
COD emission	1>	1	2	1	1>

Emission of substances subject to the PRTR law (FY 2003)				
Cabinet order number	Name of substance	(Unit)	Air	Public water
179	Dioxin	(mg)	2.3	0.1>

Kashima Plant

20 Higashi-fukashiba, Kamisu-cho, Kashima-gun, Ibaraki 314-0103 Japan Tel: +81-299-93-8311 Plant area: 340,000m^2

● Production items in FY 2003 etc.

Edible oil, Mayonnaise type dressing, Beverage, Surfactant, Fatty chemicals etc.

Classification	FY				Unit: tons
	1999	2000	2001	2002	2003
Total production output	210,496	236,361	244,995	284,007	292,598
CO_2 emission	108,731	109,106	112,817	116,140	115,508
Waste generated	28,666	24,041	27,592	29,506	30,003
Waste discharged	4,425	3,734	4,686	4,538	4,895
Final disposal for landfill	63	89	162	223	85
SOx emission	12	14	14	21	7
NOx emission	71	92	78	75	79
COD emission	14	15	13	12	10

Emission of substances subject to the PRTR law (FY 2003)				
Cabinet order number	Name of substance	(Unit)	Air	Public water
There are no facilities subject to the special law concerning countermeasures against dioxin.				

Because effluence containing COD drains to public sewage, data for COD reflects subtraction at the sewage treatment plant based on the subtraction rate.

Toyohashi Plant

4-51 Akemi-cho, Toyohashi-shi, Aichi 441-8074 Japan Tel: +81-532-23-2711 Plant area: 314,000m^2

● Production items in FY 2003 etc.

Shampoo/ conditioner, Bath additives, Face washer/makeup remover, Anhidrotic/deodorant, Men's cosmetics, Hair cosmetics, Hair dying agent, Hygiene care products, Nivea-Kao products

Classification	FY				Unit: tons
	1999	2000	2001	2002	2003
Total production output	33,734	39,863	33,447	35,803	40,407
CO_2 emission	9,343	9,237	9,118	9,159	9,772
Waste generated	5,401	2,691	2,177	1,795	2,139
Waste discharged	4,237	2,691	2,177	1,609	2,111
Final disposal for landfill	128	404	414	97	12
SOx emission	1	1	2	1	2
NOx emission	37	33	33	29	27
COD emission	1>	1>	1>	1>	1>

Emission of substances subject to the PRTR law (FY 2003)				
Cabinet order number	Name of substance	(Unit)	Air	Public water
There are no facilities subject to the special law concerning countermeasures against dioxin.				

Ehime Sanitary Products Company, Limited

6-3 Hiuchi, Saijo-shi, Ehime 793-0003 Japan Tel: +81-897-55-1888 Plant Area: 47,800m^2

● Production items in FY 2003 etc.

Paper products for kitchen, Paper cleaning products, Pet animal care products, Sanitary napkins, Baby diapers, Incontinence/care products etc.

Classification	FY				Unit: tons
	1999	2000	2001	2002	2003
Total production output	37,132	41,076	35,305	40,436	30,126
CO_2 emission	25,499	25,369	24,700	23,002	20,508
Waste generated	4,729	4,386	3,761	4,013	3,456
Waste discharged	1,384	1,225	970	1,360	1,010
Final disposal for landfill	180	155	187	163	5
SOx emission	5	5	5	1>	1>
NOx emission	156	152	84	5	4
COD emission	—	—	—	—	—

Emission of substances subject to the PRTR law (FY 2003)				
Cabinet order number	Name of substance	(Unit)	Air	Public water
179	Dioxin	(mg)	0.1>	0.1>

◆ **Written Opinions for Verification (Original in Japanese)**

レスポンシブル・ケア

「環境安全・社会報告書 2004年版」第三者検証 意見書

2004年6月2日

花王 株式会社
代表取締役 社長執行役員 後藤 卓也 殿

検証評議会議長
山本明夫
レスポンシブル・ケア検証センター長
田中康夫

■検証の目的

レスポンシブル・ケア報告書検証は、花王株式会社が作成した「環境安全・社会報告書2004年版」(以後、報告書と略す)を対象として、下記の事項について、化学業界の専門家としての意見を表明することを目的としています。

1) パフォーマンス指標(数値)の算出・集計方法の合理性並びに数値の正確性
2) 記載情報と証拠資料・証拠物件との整合性
3) レスポンシブル・ケア活動の評価
4) 報告書の特徴

■検証の手順

・本社において、報告書記載情報と証拠資料との整合性の確認、及び各サイト(事業所、工場)から報告されるパフォーマンス指標の集計・編集方法の合理性に関する調査を、各業務責任者並びに作成責任者に質問すること及び資料提示・説明をうけることにより実施。
・サイトにおいて、報告書記載情報と証拠資料・証拠物件との整合性の確認、本社に報告するパフォーマンス指標の算出・集計方法の合理性の調査、及び数値の正確性に関する調査を各業務責任者並びに作成責任者に質問すること及び資料提示・説明をうけることにより実施。なお、サイトとしては、鹿島工場と和歌山工場を選定。
・パフォーマンス指標及び記載情報の検証についてはサンプリング手法を使用。

■意見

1) パフォーマンス指標(数値)の算出・集計方法の合理性並びに数値の正確性
・本社及び調査したサイトに於ける、パフォーマンス指標の算出・集計方法は、合理的でした。
・調査した範囲に於いて、パフォーマンスの数値は正確でした。
2) 記載情報と証拠資料・証拠物件との整合性
・報告書に記載された情報は、調査した証拠資料・証拠物件と整合性があることを確認しました。原案段階では表現の適切性あるいは文章の分かり易さに関し、若干指摘事項が認められましたが、現報告書では修正されており、現在修正すべき重要な事項は認められません。
3) レスポンシブル・ケア活動の評価
・2005年度、全工場の廃棄物ゼロエミッションを目標に掲げ、2003年度は3工場でゼロエミッションを達成される等、着実に環境保全を推進されている点を評価します。
・「環知安システム」という環境と安全に関するデータベースを開発され、これがパフォーマンスデータの算出・集計に関する信頼性、透明性の向上に役立っている点を評価します。今後、このシステムを国内外の関係会社にも適用されることを期待します。
・前年度の指摘事項であるPCBの管理につき、きちんと改善対応を取られている点を評価します。
4) 報告書の特徴
・今年度より、社会報告書と名づけ、企業の社会的責任に言及されている点、「花王ビジネスコンダクトガイドライン」を制定し、企業倫理の徹底に取り組んでいる点を評価します。
・今年度より、海外の関係会社の活動をわかりやすく掲載する等、報告書に対する利害関係者の意見を反映し、報告書を継続的に改善されている点を評価します。

以上

(English translation)

Written opinion concerning third party verification of 'Environment, Safety and Health Report 2004'

To: Mr. Takuya Goto, President & CEO
Kao Corporation
June 2, 2004

Akio Yamamoto
Chairperson, Verification Committee
Yasuo Tanaka
Chief, Responsible Care Verification Center

■ Purpose and scope of verification

The purpose of verifying the 'Environment, Safety and Social Report 2004 prepared by Kao Corporation (hereinafter referred to as 'the Report') is to clarify the following points and to express opinions from the standpoint of experts in the chemical industry:

1) Appropriateness and reasonableness of methods used to calculate and compile performance indices (numeric values) and accuracy of numeric values
2) Compatibility of the information contained in the Report with evidence and proof
3) Evaluation of Responsible Care activities
4) Features of the Report

■ Verification procedure

- In the Company's head office, the Center verified the compatibility of the information contained in the Report with the evidence and examined the reasonableness of the methods of calculation and editing the performance indices reported by the individual site (offices and plants) by interviewing the personnel responsible for each task and for compiling the report, and by examining the documentation presented.
- At the individual sites, the Center verified the compatibility of the information contained in the Report with the evidence and proof and examined the reasonableness of the methods of calculating and editing the performance indices and the accuracy of the numeric values reported to head office by interviewing the personnel responsible for each task and for compiling the report, and by examining the documentation presented. The individual sites selected were the Kashima and Wakayama plants.
- A sampling method was employed for the verification of the performance indices and the information in the Report.

■ Opinions

1) Reasonableness of methods used to calculate and compile performance indices (numeric values) and their accuracy
   - The methods of calculating and compiling the performance indices at head office and at the sites investigated were reasonable.
   - The performance indices are accurate to the extent of the examination.
2) Compatibility of the information contained in the Report with evidence and proof
   - The Center confirms that the information contained in the Report is compatible with the evidence and proof examined. Some instructions were given at the drafting stage in relation to the appropriateness of presentation and the ease of comprehension of the text, and the original text was modified. The Center now finds no items that require correction.
3) Evaluation of Responsible Care activities
   - The Company rates well on its genuine progress in environmental protection through setting a target of zero waste emissions from all plants in FY 2005 and three plants having achieved zero emissions in FY 2003.
   - The Company rates well for its development of a database on the environment and safety, and the role of the database in improving the reliability and transparency of the calculation and editing of the performance data. The Center expects this system (named as the Kanchan system) is to be applied to other affiliates both domestic and overseas.
   - The Company rates well for the targeted and appropriate measures it has taken to manage PCBs. This was an indicator for the previous fiscal year.
4) Features of the Report
   - The Company rates well for its engagement with business ethics by specifying in the 'Kao's Business Conduct Guidelines' that 'Social' is to be added to the title of the Report from the current fiscal year and that the Report is to extend to the social responsibilities of business.
   - The Company rates well for its ongoing efforts to improve the Report, by presenting the activities of its overseas associated companies in a more easily understood manner and reproducing the views of the Report of stakeholders from the current fiscal year.

Environment, Safety and Social Report 2004

Issued: October, 2004 **Issued by Kao Corporation**

Please forward inquiries to:

Headquarters of Environment & Safety
Kao Corporation
Zip Code 131-8501
2-1-3, Bunka Sumida-ku Tokyo Japan
[Tel] 03-5630-9089 (Domestic) 81-3-5630-9089 (From overseas)
[Fax] 03-5630-9343 (Domestic) 81-3-5630-9343 (From overseas)

URL: http://www.kao.co.jp/corp_e/responsible

- Water-less printing, free from harmful effluent
- Printed with soy ink, free from petroleum solvent, VOC
- Printed on 100% recycled paper

PRINTED WITH SOY INK
Containing no volatile organic compounds

Printed on 100% recycled paper