

OLYMPUS[®]

Your Vision, Our Future

ENVIRONMENTAL
REPORT
2003



Contents

Olympus and the Environment	2	Business Activities and Environmental Impact	
Environmental Management	4	Management Philosophy and Environmental Principles	
	5	Promotion System	
	6	Basic Environmental Plan	
	8	Environmental Management System	
	10	Risk Management	
	12	Environmental Education	
	14	Health and Safety	
	15	Environmental Accounting	
	Product-Related Measures	16	Environmentally Conscious Products
		17	Eco-products
18		Environmental Approach to Product Design	
19		Green Procurement	
20		Examples of Environmentally Conscious Products	
21		Examples of Environmental Technology Development	
Manufacturing-Related Measures	22	Environmental Consciousness in Product Packaging and Distribution	
	24	Energy and Resources Management	
	26	Waste Management and Recycling	
Communication with Society	28	Chemicals Management	
	30	Social Contribution	
Environmental Data at Facilities	32	Environmental Communication	
	34	Environmental Data of Domestic and Overseas Facilities	
Environmental History and Business Bases	36	Overseas Production Bases	
	38	Olympus Environmental Activities and Awards /Editor's note	
	39	Olympus Group's Main Operating Bases	

Company Overview (as of March 31, 2003)

Corporate name: Olympus Optical Co., Ltd.
Date Established: October 12, 1919 (Taisho 8)
Location of Head Office:
 Shinjuku Monolith, 2-3-1Nishi-Shinjuku, Shinjuku-ku Tokyo 163-0914, Japan
Phone: +81-3-3340-2111
Business Area:
 Manufacture and Marketing of medical, health-care, image, information, Industrial and Related Equipment including Film Cameras, Digital Cameras, IC Recorders, Magneto-optic Disks, Binoculars, Endoscopic equipment for digestive organs, Surgery, Endo-therapy Products, Ultrasound Endoscopes and related equipment, Biological Microscopes, Analyzers, Genome Analysis Systems, Information Equipment, Industrial Endoscopes, and Industrial Microscopes.
Capital: 40,832 million yen
Total Number of Employees in Olympus Group: 24,126
Total Number of Employees in Olympus Optical Co., Ltd.: 5,223 (permanent, and temporary employees)
Net Sales for Olympus Group: 564,343 million yen (in FY2003)
Net Sales for Olympus Optical Co., Ltd.: 346,364 million yen (in FY2003)

This report covers:

Olympus Optical Co., Ltd.
Technology Research Institute (Hachioji)
Hinode Plant
Ina Plant
Tatsuno Plant
Affiliated production companies of Olympus Optical Co., Ltd.
Tokyo Kinzoku Co., Ltd. Kyowa Plant
Aomori Olympus Co., Ltd.
Aizu Olympus Co., Ltd.
Olympus Opto-technology Co., Ltd.
Head Office Ohmachi Branch Sakaki Branch
Mishima Olympus Co., Ltd.
Shirakawa Olympus Co., Ltd.
Okaya Olympus Co., Ltd.

Period covered: Fiscal year(FY) 2003 (April 1, 2002, to March 31, 2003)
 Number of employees: 5,827 (as of March 31, 2003)

Photograph on the cover:
 shot by Mr. Mitsuaki Iwago, animal photographer

Born in Tokyo in 1950. He has visited most of the globe alone taking pictures of nature and animals and has published a number of true-to-life photographs. His works are highly regarded internationally.

Cover photograph: Northwestern Hawaiian Islands
 Islands located in a 2,200 km chain northwest of four Hawaii Islands to Midway Islands. This area was designated as a National Wildlife Refuge by President Roosevelt in 1909. Since this area is a breeding place for endangered species and maintained under strict control for environment protection, no one can enter without special permission.

U.S. Department of the Interior Fish and Wildlife Service
 Midway Atoll National Wildlife Refuge/ Hawaiian Islands National Wildlife Refuge U.S. Fish and Wildlife Service
 Department of the Interior

Message from the President

With increasing awareness of the social responsibility of corporations, often called Corporate Social Responsibility(CSR), among Corporate Management, the Olympus Group has undertaken corporate activities to fulfill CSR, taking “Social IN”(Social Value in the Company) as the origin of its management philosophy.

Since it was the first year of Basic Environment Plan 2002, we implemented environmental-harmonized management in FY2003, focusing on three priority measures — developing environmental technology and Environmentally Conscious Products, meeting the challenge of achieving Zero Emissions, and promoting Group-standardized Environmental Management. Recognizing that the business activities of a corporation can place a considerable burden on the environment, we have promoted awareness of the need to perceive environment problems as opportunities for value creation such as by improving energy efficiency, productivity enhancement, creating new values through development of Eco-products, realizing Zero-Emissions plants, and establishing cyclical production.

Olympus Eco-product standards have been set and Eco-Product accreditation arranged for developing of the environmental technology and Environmentally Conscious Products. Olympus Eco-products will be introduced into the market. To meet the challenge of achieving Zero Emissions, we have reduced total waste volume and increased the recycling ratio. In FY2004, zero emissions, with the target of a maximum 1% going to final landfill, is expected to be attained at all branches. We have seen great advances in environment data control in overseas facilities for promoting Group-standardized Environmental Management, but we will further strengthen the approach of this theme overseas.

Diagnosis of soil and groundwater contamination risk, started last year at branches have finished, with safety confirmed at all but one branch. We will further study this site and implement soil improvement and greening.

While sharing values with society, we will address article fabrication that creates new values and will maintain corporate activity, based on the corporate slogan “Your Vision, Our Future.”



June 2003

A handwritten signature in black ink, which appears to read "Tsuyoshi Kikukawa". The signature is fluid and cursive.

Tsuyoshi Kikukawa
President

Business Activities and Environmental Impact

Olympus seeks to grasp the impact imposed by its business activities on the global environment as clearly as possible and to implement activities minimizing such impact.

Major Environmental Impact in Development and Production Processes

INPUT

Energy ▶P24

- Electric power.....96,390,000kWh
 - Heavy fuel oil3,941kl
 - Kerosene.....268kl
 - Diesel fuelv72kl
 - Gasoline54kl
 - City gas.....680,000m³
 - LPG.....130,000m³
 - Total1,198TJ
- TJ (terajoule) =10¹²J

Raw Materials

- Metals
.....Steel, aluminum, brass
- Optical glass
- Plastics
.....ABS, PC, polyethylene, polypropylene
- Chemicals
....Acids, alkalines, solvents, paints

Office Supplies ▶P25

- Copy paper.....133tons

Other Utilities ▶P25

- Piped water.....170.000m³
- Ground water.....1,400,000m³

Research and development



Design



Manufacturing



Development and Production Business Facilities

- Technology Research Institute (Hachioji) • Hinode Plant • Ina Plant • Tatsuno Plant
- Tokyo Kinzoku Co., Ltd. • Kyowa Plant • Olympus Co., Ltd., Aomori Plant • Olympus Co., Ltd., Aizu Plant
- Olympus Opto-technology Co., Ltd. / Head Office / Ohmachi Branch / Sakaki Branch
- Mishima Olympus Co., Ltd. • Shirakawa Olympus Co., Ltd. • Okaya Olympus Co., Ltd.

OUTPUT

CO₂ Emissions ▶P24

- Electric power ...34,412tons-CO₂
- Heavy fuel oil...10,917tons-CO₂
- City gas.....1,462tons-CO₂
- LPG.....803tons-CO₂
- Kerosene672tons-CO₂
- Others.....314tons-CO₂
- Total48,580tons-CO₂

Boiler Air Pollutants ▶P11

- SO_x6tons
- NO_x.....40tons

Emissions of PRTR-listed substances ▶P28

- Toluene9.5tons
- Xylene2.7tons
- Ethylene oxide0.8tons
- Trichloroethylene0.5tons
- Ethylene glycol0.3tons
- Others0.6tons
- Total14.4tons

Emission into Water Systems ▶P11

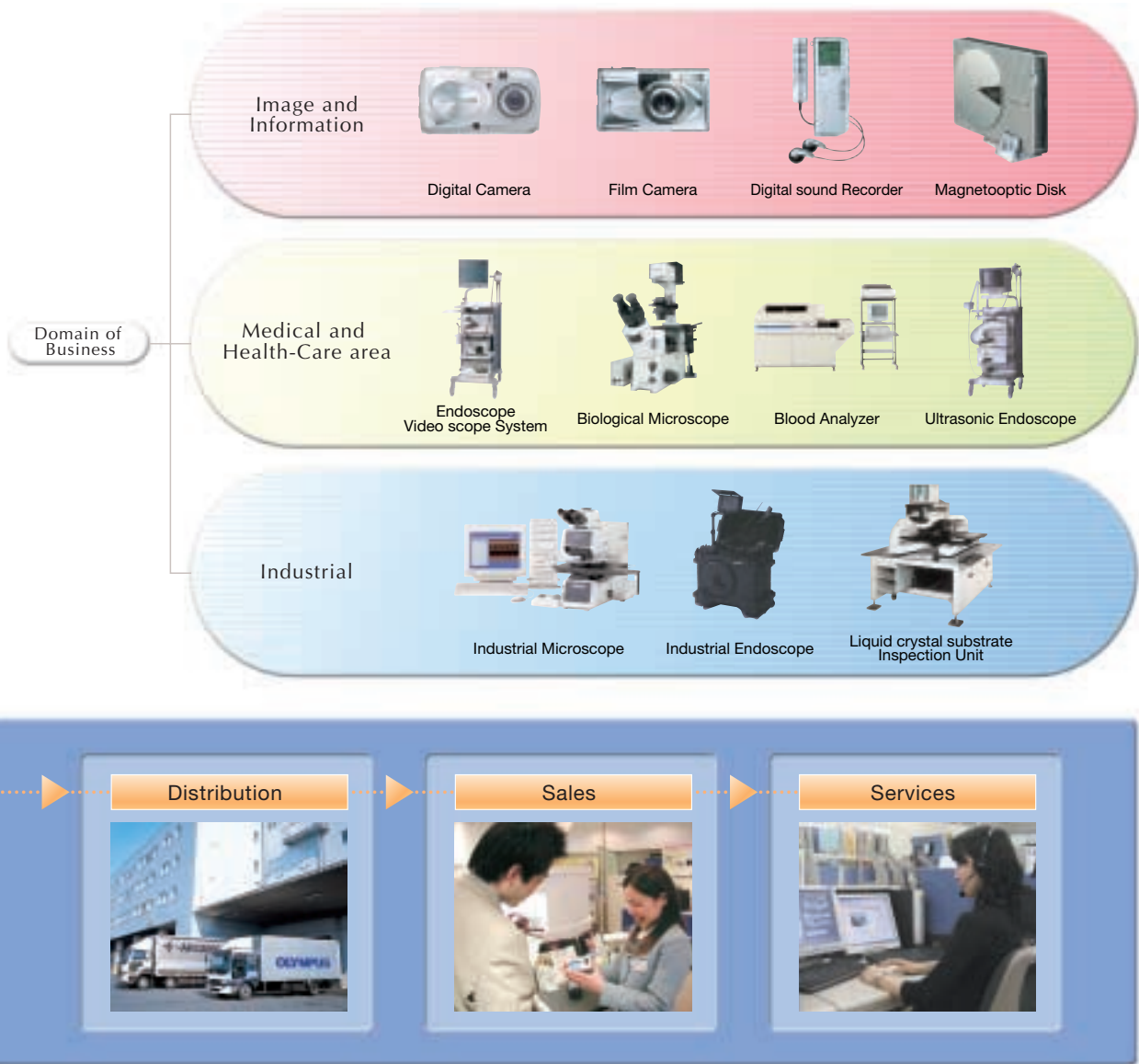
- BOD5.2tons

Recycled Wastes ▶P26

- Waste metals and glass...825tons
- Paper and cardboard.....742tons
- Plastics381tons
- Raw waste and sludge ...279tons
- Waste oil257tons
- Waste acids and alkalines ...157tons
- Total2,641tons

Commissioned Waste Processing ▶P27

- Waste plastics215tons
- Waste paper154tons
- Sludge145tons
- Waste acids125tons
- Waste alkalines.....103tons
- Waste metals and glass...65tons
- Waste oil37tons
- Others3tons
- Total847tons



OUTPUT

Major Products [▶P16](#)

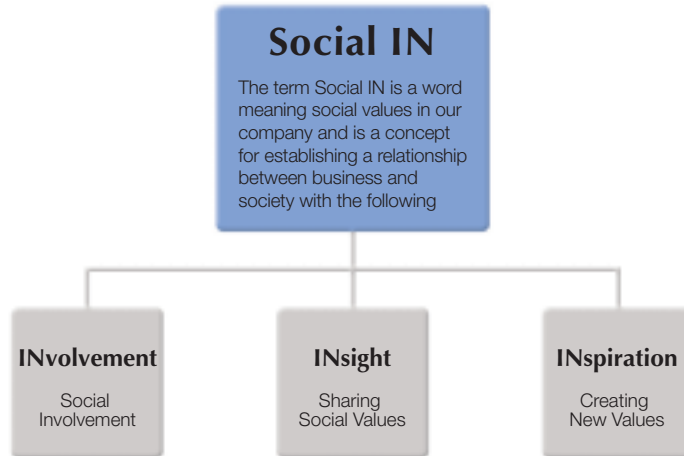
- Digital Camera1,060tons
- Film Camera950tons
- Sound Recorder170tons
- Magneto-optic Disk ...140tons
- Endoscope.....560tons
- Microscope.....700tons
- Analyzer600tons
- Measuring Instruments100tons
- Printer150tons
- Total4,430tons

Packaging Materials [▶P22](#)

- Cardboard1,409tons
- Paper483tons
- Plastics222tons
- Metal48tons
- Glass.....2tons
- Total2,164tons

Management Philosophy and Environmental Principles

The Olympus group cherishes a concept of "Social IN" that takes social values as its basic idea in company management. Our environment charter contains the guiding principle that we are to act as a corporate citizen fully merged with society so environmental protection activities are implemented in a practical manner.



Realization of Social IN

The Olympus Group has made Social IN the starting point for its management philosophy.

Social IN means the realization of a healthy and happy life for members of society in harmony with society, the sharing of common values and the proposal of new values through business.

The basis of our action is to change way of thinking by pushing the boundaries and by fully embracing customer-oriented action.

Olympus Environmental Principles

This reflects Olympus's basic ideas for solving environmental problems.

In accordance with its goal of being an excellent corporate citizen, Olympus drafted the Olympus Environmental Principles in August 1992 to clearly articulate its basic positions on environmental issues and to set ambitious environmental protection goals, thereby promoting enhanced environmental protection activities.

This was determined by a management conference following the deliberations of a company-wide environment committee.

Environment Protection Declaration

Olympus, respecting nature and the health and safety of mankind, has resolved through its technological development and through adopting ecologically compatible business practices to contribute to the re-establishment of a healthy environment and a society in which sustainable development is possible.

Guideline for Environmental Action

In all business activities, Olympus will give priority to environmental protection and will apply itself with dedication to this task both on an organizational and an individual basis.

1. Technology Development

We will develop products and production technologies with a careful and conscientious regard for safety and environmental protection. Furthermore, we will make the results of such developments available to everybody.

2. Drawing up Norms and Assessing Results

We will take the initiative in setting up our own standards and norms. We will assess the environmental impact at each stage of our operations from development through to production and sales.

3. Protection of Natural Resources

We will make a united effort to conserve natural resources and save energy. At the same time, we will push forward with recycling activities such as the retrieval of discarded materials and the reuse of resources.

4. Activity Support

We will cooperate with environmental measures recommended by government bodies. We will treat regional and international environmental protection activities with understanding and will actively participate in and support them.

5. Education and Total Staff Participation

We will publicize and engage in other activities with the purpose of informing all Olympus staff of the need for environmental protection. We will encourage each and every staff member to increase his or her understanding of environmental protection activities at home, at work, and in the community.

6. Structure to Promote Activities

Under our director in charge of environmental protection, we will make clear our responsibility to promote environmental protection. We will establish a structure through which we can take appropriate measures to deal with changes as they occur inside and outside Olympus.

Environmental Management Promotion System

All environment policies, strategies, and agendas of the Olympus Group are subject to deliberation and decision-making on the management executive board, with the president as chair.

Organization of Promotion

Olympus has had a Director in responsible for Environmental Affairs since 1992. Measures for Olympus Group's environmental affairs are drafted and priority measures and key problems at the branch deliberated in the Olympus Group Environment Committee and the Facility Environmental Affairs Administration Meeting in order to solve problems.

Environment management organizations are set up at Groups, Centers, Facility sites, and overseas local corporate units to ensure specific environment promotion at those places.

An Eco-products Approval Committee was established in 2003 to approve Eco-products based on Olympus Eco-product Standards to further promote the creation of Environmentally Conscious Products.

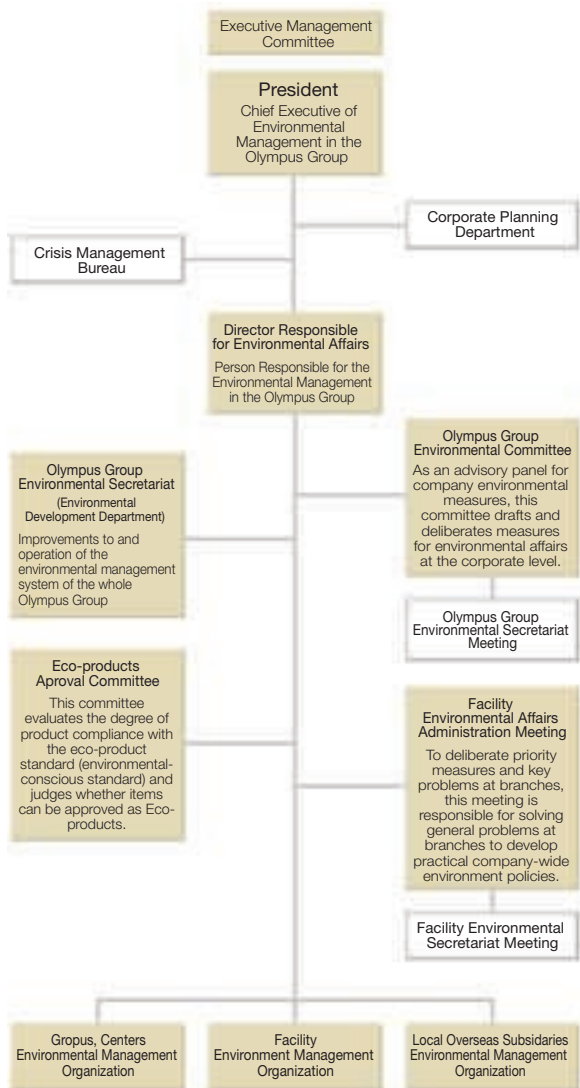


Meeting

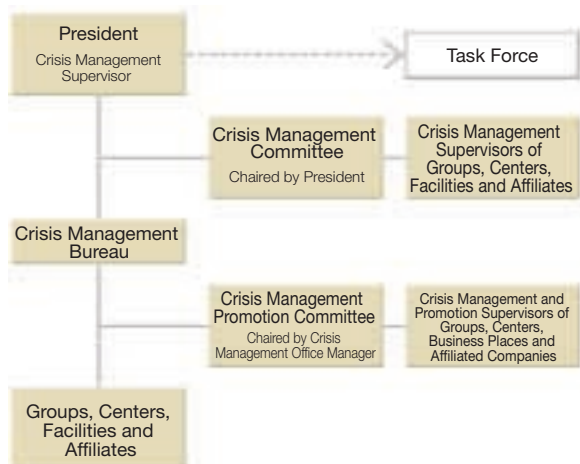
Crisis Management

As economic activities by corporations increase, we have more occasions to encounter unexpected crises due to changes in social systems and awareness. Olympus has appointed the President as the Crisis Management Supervisor and has formulated crises management rules for standardized control of crisis information company-wide both in order to prevent the development of a crisis and to promote the early solution of problems, should they arise. These rules apply to environment at risk managements as to enhance environmental protection.

Olympus was not involved in any lawsuit, fine, penalty, or complaint in FY2003.



■ Olympus Group Environment Administration (as of April 2003)

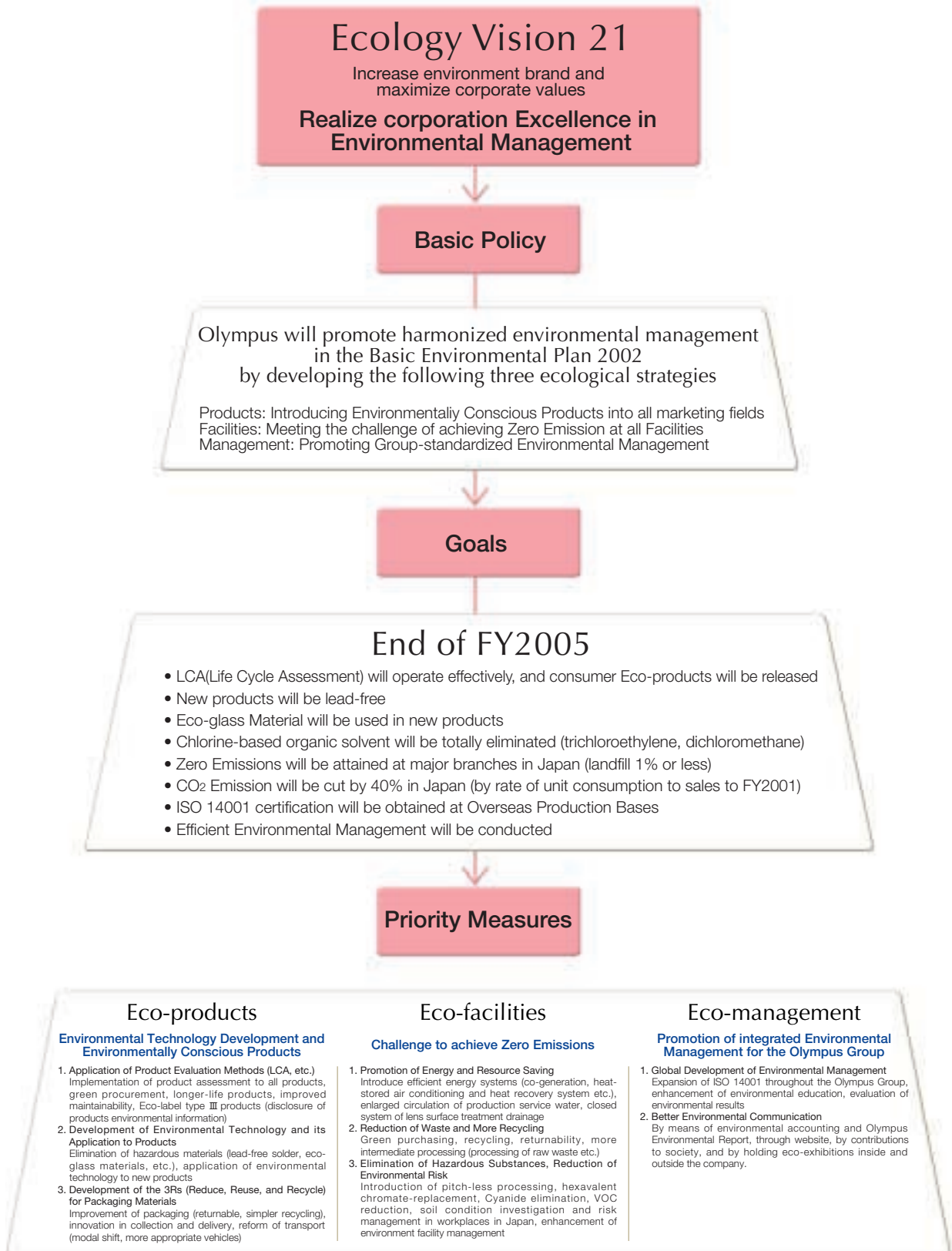


■ Crisis Management



Basic Environmental Plan

Every three years, Olympus formulates a Basic Environmental Plan for the coming five years based on presidential policy. In FY2003, the first fiscal year of The 02 Environmental Basic Plan, we addressed the promotion of Eco-products, Eco-facilities, and Eco-management.



■ The 02 Environment Basic Plan (formulated in December 2001)





■ Results for 2002

○: Achieved △: In work

Eco-products (Environmental Technology Development and Environmentally Conscious Products)

Priority Measures	Goals	Results	Self-Evaluation
Application of Product Evaluation Methods	<ul style="list-style-type: none"> Approach to LCA Introduction 	<ul style="list-style-type: none"> Olympus LCA has been arranged after research into LCI(Life Cycle Inventory) data Trial for four products in each group was completed. Participating in establishment of an Eco-leaf Environment Label Standard for film and digital cameras 	○
	<ul style="list-style-type: none"> Introduction and Promotion of Eco-Products 	Establishment of Olympus Eco-products Standards	○
Development of Environmental Technology and its Application to Products	<ul style="list-style-type: none"> Application of Lead-free Solder to New Products 	The plan to manufacture Lead Free Products was reviewed and postponed	△
	<ul style="list-style-type: none"> Application of Eco-glass to New Products 	The use ratio of Eco-glass throughout the company is 94.7%. All of our own cameras use 100% Eco-glass	○
Development of the 3Rs for Packaging Materials	<ul style="list-style-type: none"> Collection of Used Packing Materials started 	<ul style="list-style-type: none"> Collection treatment started to answer request from medical services equipment users. Use of corrugated cardboard for Endoscope Carrying Case Packaging materials reduction through film packing for Microscope 	○

Eco-facilities (Challenge to achieve Zero Emissions)

Priority Measures	Goals	Results	Self-Evaluation
Promotion of Energy and Resource Saving	<ul style="list-style-type: none"> CO₂ Emission in Japan: 12% Reduction of Rate of Unit Consumption to Sales in FY2001 	<ul style="list-style-type: none"> CO₂ emissions in facilities in Japan: was not achieved yet, the reduction of the rate of unit consumption to sales was 9% Total amount tends to increase if overseas Shenzhen (China) is added 	△
	<ul style="list-style-type: none"> Water Reduction 	<ul style="list-style-type: none"> Increase by 4% compared to the previous year 	△
Waste Reduction and more Recycling	<ul style="list-style-type: none"> Amount of Waste 5% Reduction in FY2001 	<ul style="list-style-type: none"> Amount of waste showed a 9.6% reduction; and a recycling ratio of 75.8% 	○
	<ul style="list-style-type: none"> Measures were set Toward Zero Emissions 	<ul style="list-style-type: none"> Diagrams and equations were created to clarify tabulation divisions from waste occurrence to disposal The disposal contractor was changed, and the new contractor required to expand recoverable resources and to realize the amount discarded domestic fills 	○
Elimination of Hazardous Substances, Reduction of Environmental Risk	<ul style="list-style-type: none"> Total Elimination of Chlorine-based Organic Solvent in FY2005 	<ul style="list-style-type: none"> Total elimination of trichloroethylene by the end of March,2003. Abolition of dichloromethane remains as a future problem (used in painting jig exfoliation, plastics molding metal die cleaning) 	○
	<ul style="list-style-type: none"> Drafting a Plan for Abolishing Hexavalent Chromium 	<ul style="list-style-type: none"> Formulating a plan for total elimination of hexavalent chromium at the Research and Development Center by the end of 2005 	○
	<ul style="list-style-type: none"> Soil Investigation Completed in Facilities in Japan 	<ul style="list-style-type: none"> Investigation completed 	○

Eco-management (Promotion of Integrated Environmental Management for the Olympus Group)

Priority Measures	Goals	Results	Self-Evaluation
Global development of Environmental Management	<ul style="list-style-type: none"> Extension of ISO 14001 to the whole Olympus Group 	<ul style="list-style-type: none"> The OIS Environmental Management Manual was reviewed and updated as the Olympus Internal Standard (OIS) Acquisition of ISO 14001 certification for Corporate Environmental Management within 2003 is planned and activity has started ODI (Ireland) is expected to obtain certification in July 2003 	○
	<ul style="list-style-type: none"> Overseas Facility Environment Data Control was Strengthened 	<ul style="list-style-type: none"> Quarterly Data Control is on the way at Overseas Facilities in OWI (Germany), ODI, and KeyMed (UK) 	○
Better Environmental Communication	<ul style="list-style-type: none"> Holding an internal Eco-exhibition 	<ul style="list-style-type: none"> An Internal Eco-forum was held in Tokyo in September. A circulating panel exhibit was conducted at six other facilities 	○

Environmental Management System

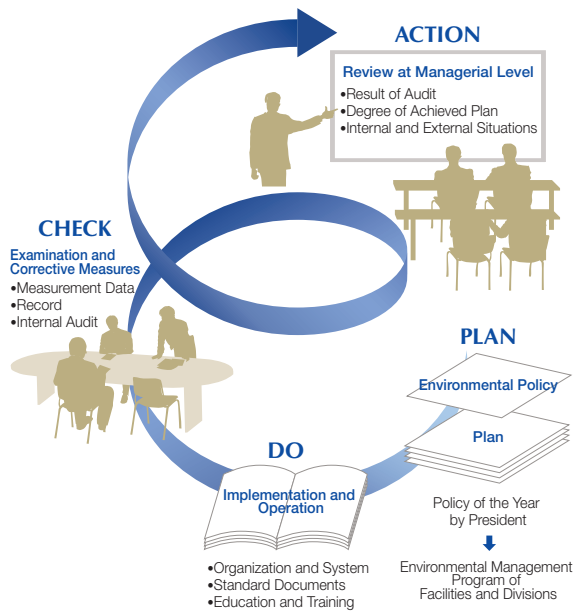
The Olympus group takes the ISO 14001 Environmental Management System as the basic means for environmental management promotion and is encouraging implementation by the group.

Overview of Environmental Management System

Our Environmental Management System alleviates environmental impact by following the cycle of Plan-Do-Check-Action (PDCA).

The Olympus Group rotates the PDCA cycle while branches and divisions follow their own cycles.

The ISO 14001 Environmental Management System is introduced by each facility starting from the branch in charge of production. The system will be applied to development, service, office, and marketing facilities. It will also be promoted at overseas branches.



■ Environmental Management System Flow

ISO 14001 Certification

The Ina Plant, a production branch, was the first to be granted ISO 14001 certification in the group, followed by production and Development Facilities and Overseas Manufacturing Bases. Major development and production branches in Japan obtained ISO 14001 certification by FY2000, and nine facilities have already been updated.

These branches have produced good results, such as Environmentally Conscious Products, energy saving, and waste reduction through improvement by the Environmental Management System.

Among affiliated manufacturing companies overseas, certification has been obtained by Olympus Shenzhen Industrial Ltd. (Shenzhen plant) in China, Olympus Winter & Ibe GmbH in Germany, and KeyMed (Medical & Industrial Equipment) Limited in the UK.

10 out of 12 branches in Japan and three out of four Overseas Development and Manufacturing Bases have obtained certification. The number of employees at accredited facilities is 14,100, corresponding to about 58% of employees in the Olympus group.

Facility	Location	Date of Site Acquisition
Ina Plant	Ina-shi, Nagano	February 1997
Tatsuno Plant/Okaya Olympus Co., Ltd.	Tatsuno-machi Kamiina-gun, Nagano	February 1998
Hinode Plant	Hinode-machi Nishitama-gun, Tokyo	July 1998
Technology Research Institute (Hachioji)	Hachioji-shi, Tokyo	March 2000
Aizu Olympus Co., Ltd /Opnotech Co., Ltd.	Aizu-Wakamatsu-shi, Fukushima	October 1998
Shirakawa Olympus Co., Ltd.	Nishigo-mura Nishishirakawa-gun, Fukushima	October 1998
Aomori Olympus Co., Ltd.	Kuroishi-shi, Aomori	November 1998
Olympus Opto-technology Co., Ltd. Sakaki Branch	Sakaki-machi Hanishina-gun, Nagano	December 1998
Mishima Olympus Co., Ltd.	Nagaizumi-machi Sunto-gun, Shizuoka	June 1999
Tokyo Kinzoku Co., Ltd. Kyowa Plant	Kyowa-machi Makabe-gun, Ibaraki	February 2003
Olympus(Shenzhen) Industrial Ltd.	Shenzhen, China	September 1999
Olympus Winter & Ibe GmbH	Hamburg, Germany	May 2001
KeyMed(Medical & Industrial Equipment) Limited	Southend-on-Sea, United Kingdom	March 2002

■ ISO 14001 Certifications for the Olympus Group(As of March 31, 2003)



Facilities Activities

Each branch uses individual strategies and practical activities to improve the management system.

Ina Plant

“EMS(Environmental Management System) has been implemented in work”

The Ina Plant obtained ISO 14001 Certification six years ago. This year, the certifying organization commented that “It is evident that the management system has been implemented and is under excellent control.” The environment staff were delighted to receive this compliment, and resolved to pass the planned update examination in FY2004.



Noriyuki Nakamura,
General Affairs Group

Tatsuno Plant

“We have finished structural reform and reconstruction of EMS”

The Tatsuno Plant underwent organizational alteration which included the introduction of a service department and Okaya Olympus Co., Ltd., and inauguration of Olympus Opto-technology Co., Ltd., due to structural reform. We have reconstructed our Environmental Management System (EMS) as site organizations are getting more complicated due to affiliates. We were fortunate to attain an increase in secretariat members and cooperation from divisions, and have rebuilt the EMS in each plant successfully.



Kazuhiro Mayuzumi,
General Affairs Group

Mishima Olympus

“We use monthly posters to promote awareness”

Mishima Olympus started its regular environment activities when it obtained ISO 14001 Certification in 1999. As the environmental secretariat, I am convinced that an invincible will to increase the awareness of each and every staff member is essential for environment improvement. As part of the effort to increase awareness, I started to put up an environment poster in October 1998, and this has continued to today. In March 2003, Poster No. 54 was issued. I think environmental improvement is an activity that requires low-profile, persistent determination.



Kaname Hasegawa,
Purchase Group

OOT Sakaki Branch

“We have restarted a new organization”

Sakaki had many changes in FY2003, restarted as Sakaki Branch when the organization was changed from Sakaki Olympus Co., Ltd. to Olympus Opto-technology Co., Ltd., in April. We worked to prepare our environmental policy and environmental standard documents, together with computerization and other improvements. In addition, we also maintained and controlled program development in a stringent economic situation.



Rikio Takai,
Lens Technology Team

Shirakawa Olympus

“Every employee establishes an individual target”

The environmental management system of Shirakawa Olympus operates so all employees decide a proper approach in harmony with policy development and then work for better implementation. Member of environmental protection committees at each workplace report results in monthly business reports. For internal audits, members of the environmental protection committee also carefully check the approach in other workplaces while auditing each other's workplaces. They adopt good points at other workplaces in their own workplace to upgrade the system.



Snapshot during internal audit

Aizu Olympus

“We conduct a regular internal environmental audit every month”

Aizu Olympus conducts an internal environmental audit every month to determine whether the environmental management system is functioning effectively. We audited all 14 workplaces this year. For audit, we prepare different checklists based on the workplace and confirm how effectively the activity plan is implemented and how properly waste, solvents, and chemical agents are controlled. We attained our goal of training one or more auditors at each workplace.



Internal audit

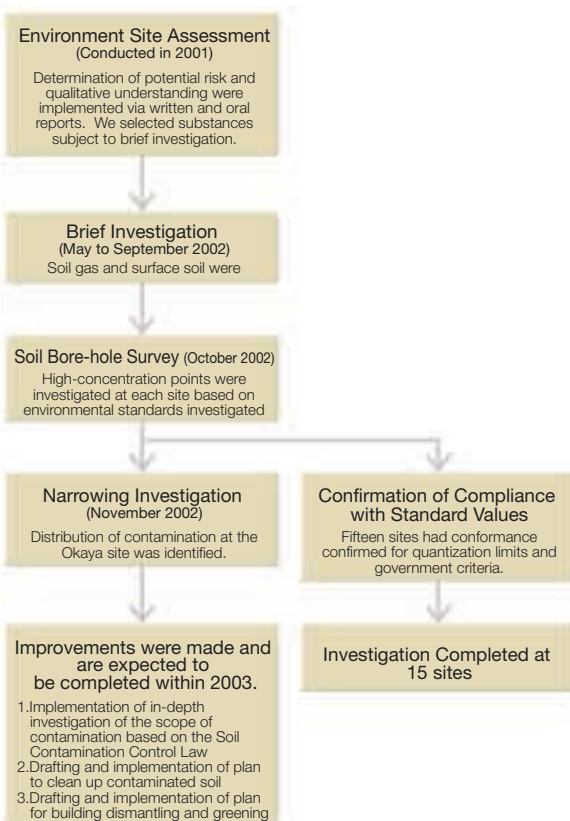
Risk Management

The Olympus group considers contamination of soil and ground water as a significant corporate risk, and conducts voluntary environment site assessment of soil and ground water at production sites in Japan.

Brief Investigation and Soil Bore-hole Survey

Although the Soil Contamination Control Law was not in effect in 2002, we conducted soil investigations at each site based on the “Standard guideline operation for investigation and actions for soil and ground water contamination” released by the Japanese Ministry of the Environment. The investigation focused on all chemicals used. Specifically, we conducted 40m mesh high-sensitivity gas concentration analysis for volatile organic chlorine compounds and 5-point mixing/elution and content test for heavy metals. Then, at each site, we selected one location where volatile organic chlorine compound or heavy metals of relatively high concentration were detected, and conducted Soil Bore-hole Surveys to a depth of 5 meters.

We confirmed that no environment standard was exceeded at 15 sites. At the Okaya site, however, trichloroethylene of 0.047 ppm (standard: 0.03 ppm) was detected at 1 m and hexavalent chromium of 0.11 ppm (standard: 0.05 ppm) was identified beneath asphalt pavement. For both compounds, we determined that they would not adversely affect the surrounding environment because they were near the surface and covered by asphalt.



■ Flow of Environment Site Assessment and Soil Survey

Volatile Organic Chlorine Compounds

Items Examined	Soil Gas				
	Dichloro-methane	Trichloro-ethylene	Tetrachloro-ethylene	1,1,1-trichloro-ethane	cis-1,2-dichloro-ethylene
Number of spots surveyed	344	344	26	344	344

Heavy Metals

Items Examined	Volume of Elution				Contents		
	Cd	As	Pb	Cr	Cd	As	Pb
Number of spots surveyed	10	10	17	17	10	10	17

■ Items Examined and Number of Spots Surveyed at 16 Sites

● Narrowed Investigation at Okaya site

A soil gas survey was done in four directions by a 5m mesh around the Soil Bore-hole Survey. Trichloroethylene with a gas concentration of 2 ppm or so was detected in the ground around the building, in which trichloroethylene was used in the past, disclosing concern for contamination exceeding the environment standard being present around the building.

● Corrective action

Based on the Soil Contamination Control Law, measures to contain trichloroethylene at the Okaya site will be implemented after an in-depth survey around the building in question, with plans such as dismantling the building, soil cleanup, and greening.



Core Drawing Operation for Heavy Metal Survey at Okaya Site



Soil Gas Vacuuming at Sakaki Site



Soil Bore-hole Survey at Tatsuno Site



Result of Soil Bore-hole Survey (Comment from Independent Investigator)

Trichloroethylene or other compounds used in the past remain in the ground at each site. We concluded that substances do not exceed the environment standard except at the Okaya site, although we did not examine the area under the building floor in this survey. We concluded that the environment standard was not exceeded at the peripheral of the premises, and hence we determine that no influential factors on the environment exist around the facility.

Regarding the Okaya site, trichloroethylene and hexavalent chromium exceed the environment standard, but had little effect outside the premises due to the reasons below. Accordingly, we determined that corrective action is not urgent at present.

- Trichloroethylene exceeded the environment standard at 1 m or so from the ground surface, but was less than the standard at 2 m and deeper.
- The place at which we found trichloroethylene exceeding the environment standard was within the premises, and we did not observe any problems in the peripheral areas, i.e., there is no external influence.
- For hexavalent chromium, the substance remains around the surface layer and thus potential influence outside the premises is deemed low. The area is covered with asphalt, and risk of scattering or permeation by rainwater is low.
- Trichloroethylene concentration in well water inside the premises ranges from 0.006 to 0.008 ppm, which probably comes from the widespread ground water contamination prevalent in the city.

We target Contamination Risk

In risk management, we consider it is essential to take contamination prevention measures in advance. The Tatsuno Plant underwent an environmental risk inspection 20 years after the start of its operation. Results showed that the piping pit, running from the surface treatment workplace to the wastewater treatment facility, had a narrow width, making inspection difficult. To solve this problem, piping was replaced with above-ground piping where practicable, and sections where replacement was not possible were treated with chemical-resistant agent, and proper space was provided so signs of abnormality can be detected early.

Hazardous substance flow into the drainage canal on the premises could spill into rivers and streams. To cope with this risk, an emergency shutoff gate to shut off contamination drainage was installed at three locations along the drainage canal.



Above-ground Pipes Replacing pit Piping

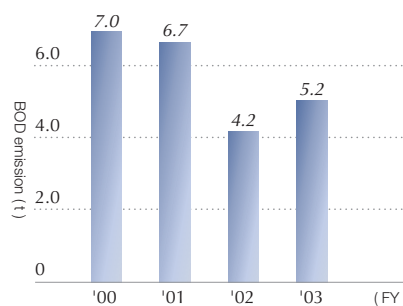
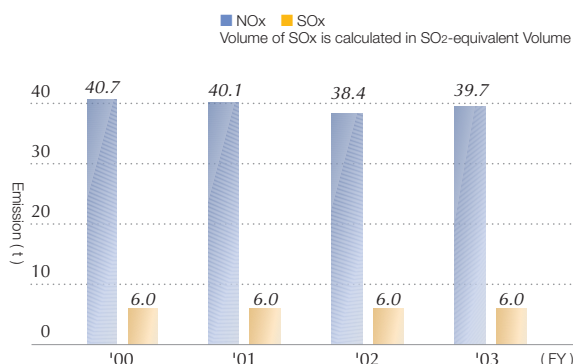


Emergency Shutoff Gate

Prevention of Air Pollution and Water Contamination

The Olympus Group not only complies in all respects with relevant national and local legislation, ensuring the preven-

tion of air pollution and water contamination, but exceeds these standards through its own voluntary code of practice.



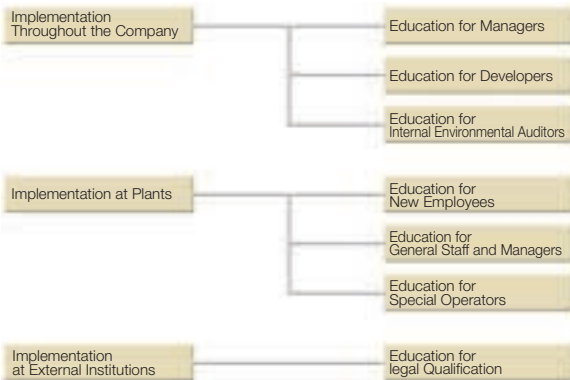
Environmental Education

It is important to improve the environmental awareness of its personnel in order to ensure the effectiveness of environment protection. Environmental education aims to cultivate awareness and encourage appropriate conduct knowledge and skill.

Environmental Education System

In order to improve Environmental Awareness and to encourage voluntary participation in environmental protection, it is believed that personnel must be properly educated; this means a broad general education and training in specific areas which includes everyone from new employees to managers.

To ensure efficient, effective education, the Olympus Group classifies education into i) company-wide education held mainly by the Human Resource Development Center of the Personnel Department and the Environmental Development Department ii) Plant Education iii) External Education. In order that employees benefit from as wide a range of training and education as possible, education programs may be provided both in-house and by external educational institutes.



■ Diagram of Environmental Education

Education Courses for the Employees

An internal Environmental Auditor Orientation Course has been held as a company-wide education course since 1997. In FY2003, this seminar was held four times with 88 participants. By FY2003, the seminar was held 22 times with 489 participants.

For developers and designers, Environmental Awareness is reflected in packaging technology courses focusing on environmental attention and design courses emphasizing resource recycling.

Education for Executives features specific discussion on environmental approaches and trends in administration and industry and evaluation of environmental management.



Internal Environmental Auditor Orientation Course

Education at Facilities and Divisions

Facilities and divisions draw up individual education plans for environmental education. For all employees, general education is implemented via briefings, workplace meetings, and networks to disseminate policies, laws and regulations, plans, standards, and implementation. New or transferred personnel are trained in areas from policy to implementation procedures. In FY2003, 112 people attended environmental education for new employees. In addition, personnel that are engaged in specific operations that involve handlings of dangerous substances, are given specific training and practical demonstrations in this field, such as, for example, how to take proper action if/when accidents occur. This is achieved through the use of documented procedures, manuals, and similar documents, and through field training sessions as necessary. Some 228 personnel took the course in FY2003.

Personnel Environment-Related Qualifications

Each facility sets internal standards and systematically educates legally qualified personnel in the environment and labor safety and health to secure the required number of staff members. For the Manager in Charge of Pollution Control, internal standards are established to assign four or more qualified personnel in specified plants and one or more water quality and related staff in locations other than specified plants. For specially controlled industrial waste management staff, one or more staff members are appointed at each plant.

Qualification		Number of Actual Persons	Internal Standard	Number of Statutory Persons
Pollution Control Managers	Air	40	18	1
	Water Quality	108	31	9
	Noise	19	7	0
	Vibration	18	5	0
Senior Pollution Control Manager		1	0	0
Manager of Industrial Waste requiring Special Treatment		65	14	14

■ Number of Environment-Related qualified persons (as of March 31, 2003)



Olympus Eco-Forum

An internal Eco-Forum was held in the Technology Development Center on September 4 and 5, 2002. This forum was the first such session involving the entire Olympus Group and ensured that all participants correctly understand how to approach environmental issues at Olympus.

The forum consisted of a poster session exhibit and a lecture. The session started with the history of the environmental approach at Olympus, followed by general situations such as long and mid-term plans, track records, and other matters, and Environmentally Conscious Products and improved energy saving and waste recycling at facilities, exhibited in 54 posters and it used actual articles. We had also panel participation and there was attendance from European plants.

Approximately 600 people entered the exhibit. Questions were received and questionnaires suggest that the exhibit achieved its objective.



Poster of Eco-forum



Panel Exhibit

●Panel Exhibit

At the exhibit, as examples of products improvements, displays included change of material and reduction of packing and packaging material; resource and energy saving in Microscope production. Improvements from facilities included exhibits of improvements made by introduction of Powder Painting, such as reduction of organic solvent and paint recycling and energy saving by modification of air conditioning. Activities and results were positively conveyed to the audience from each division.



Panel Exhibit



●Lecture Meeting and Recognition

The lecture meeting on environmental management was attended by about 160 people, including the Chairman and the President and Directors, Managers, and Environment Staff members. After the lecture, exhibitors were given prizes, including Olympus Environment Prizes awarded to six cases including product fields and plant field, and a special prize awarded to participants from overseas.



Recognition



Lecture Meeting

Environmental Management

Health and Safety

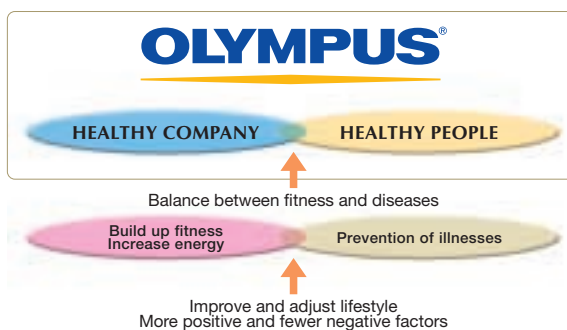
Besides compliance with applicable laws and regulations, Olympus promotes higher-level control of labor safety, health and sanitation. In addition, the company positively introduces new programs to encourage health promotion also from the viewpoint of a manufacturer of goods involved in medical and health sectors.

Control of Labor Safety

Every business place of Olympus is now addressing accidents eradication aiming at “Zero Hazard in Working Environment” through regular patrol, for example. In FY2003, we had 20 labor accidents, the same number as the previous year, but the number of absence days due to the accident decreased remarkably. To maintain the workplace and working environment in a safe and comfortable condition, various measurements are taken in the working environment of business places based on the Industrial Health and Safety Law. A few more workplaces are subject to these measurements than the previous year. In those workplaces, noise, dust, and concentration of airborne organic solvent and specified chemical substances are periodically measured, and the staffers are also trying to reduce the sources of emission.

Concept of Health Enhancement

Olympus personnel are engaged in activities for ‘Healthy Company & Healthy People’ around the corporate health insurance society. The company established a system to encourage each one of employees to convert from the traditional trend of “Sick then Treatment” to an improved idea of “Fitness prevents Diseases”, putting much faith in their awareness and practicing, and this system is still under augmentation. To pick up some example, the Corporate Medical Checkup System has been enforced to prematurely detect preclinical factors for lifestyle-related diseases so that every one can apply for medical checkup or fill in the interview sheet from his/her personal computer. Further, to “Check your life style to prevent cancer”, a latest examination technique has been introduced to increase the company medical checkup items. As additional examples, the follow-up system was enriched and Olympus “Refreshing Dial Service” started in October 2002. This service allows every one to make a telephone call for consultation about fitness and healthcare as well as guide information of facilities and services throughout the country.



■ Concept of Health Enhancement

Items	FY1999	FY2000	FY2001	FY2002	FY2003
Accidents	13	20	22	20	20
Accidents Resulting in Lost Days	1	5	9	7	8
Accidents not Resulting in Lost Days	12	15	13	13	12
Lost Days	14	25	238	163	41

■ Number of Labor Accidents

Categories	FY1999	FY2000	FY2001	FY2002	FY2003
Category 1	168	162	105	114	125
Category 2	8	7	7	2	4
Category 3	2	2	2	2	5
Total	178	171	108	118	134

Category 1: A workplace where environment management is appropriately carried out and where it is desired that current environment management processes be maintained.

Category 2: A workplace where the appropriateness of environment management is midway between that of categories 1 and 3 and where it is desired that measures be taken to shift the workplace into category 1.

Category 3: A workplace where environment management is inappropriately carried out and where it is desired that environment management processes be quickly improved.

■ Number of Workplaces in which Working Environment is Measured

Walking Campaign

In the light of prevention of lifestyle-related diseases, Olympus is now encouraging personnel to enjoy walking, which is one of exercises that every one can do freely. During the walking campaign term, or three-month period from September to November every year, the best season for walking in Japan, we are developing activities aiming at average ten thousand steps in a day. A commemorative gift is given to every participant who attained the target steps.

Participants register their made steps in the groupware database every week, and upper-ranking participants are publicized in each business place to enhance awareness of participants and also motivate others. Hinode Factory started the “First Walking Campaign” in May 2000 and carried out five campaigns until the end of last year. Besides just walking, activities to promote communication between staffers have been developed positively, and “Walking Classroom” and “Walk Rally” are also held during the campaign period.



Walking Event in Tokyo Business Place



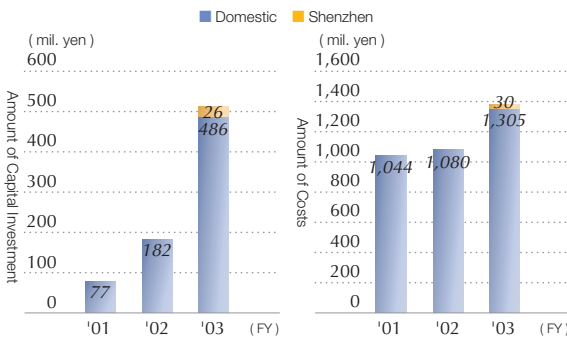
A Trophy Cup awarded in Hinode Walk Rally

Environmental Accounting

In FY2000, Olympus introduced an Environmental Accounting System created according to the Environmental Accounting Guideline issued by the Ministry of the Environment as a tool to regularly assess the cost and effects of environmental conservation activities. This system is useful for promotion of our Environment Management.

Cost and Effects on Environment in FY2003

The environment cost in FY2003 has been tabulated according to the “Environmental Accounting Guideline (2002 edition)” of Ministry of the Environment. In 2002, the Shenzhen factory, which is the largest in scale out of all Overseas Production Bases, was added in the cost calculation although calculation covered only inland production business places until 2001. The cost of environmental control including the overseas bases was 1,335 million yen, and the amount of capital investment was 512 million yen. The amount of inland cost only was 1,305 million yen, which increased by 21% from that in the previous year. Labor cost occupied 41% of total cost, which decreased by 9% from that in the previous year. This decrease resulted from the increased cost of outsourcing such as recycling promotion in comparison with labor cost. Capital investment within the country was 486 million yen, 2.7 time that in the previous year, showing a sharp increase. Particularly in 2002, new measures were taken including installation of shutoff gates to rivers and streams for prevention of water quality pollution, implementation of soil investigation, and introduction of high-efficiency air conditioning units



■ Transition of Environmental Conservation Cost

to ensure energy saving.

Regarding environmental conservation, on the other hand, the amount of intermediate treatment of waste by contract showed a conspicuous effect of 45% reduction from that of the previous year by inland comparison although the amount of emitted CO2 and volume of purchased copy paper exceeded those of the previous year. We consider this is the result of increased resource circulation cost such as external recycling operation by contract out of the abovementioned cost.

For economic effects in the country, energy cost was 1,484 million yen and the cost of intermediate treatment of waste by contract was 40 million yen, showing a reduction ratio of 6% and 39%, respectively, compared with the previous year.

Unit: ton

Grouping	Environment Load Index	Domestic, FY2002	FY2003		Change from Previous FY (Domestic)	Ratio of Change (Domestic)
			Domestic	Shenzen		
Effects in Business Place Areas	CO2 Emission	45,966	48,221	16,042	2,255	5%
	Waste Intermediately treated by Contract	1,530	840	123	-690	-45%
	Copy Paper Purchased	125	113	—	8	6%

■ Volume Effects Involved in Environmental Conservation

Unit: million yen

Grouping	Description of effects	Domestic, FY2002	FY2003		Change from Previous FY (Domestic)	Ratio of Change (Domestic)
			Domestic	Shenzen		
Cost Reduction	Energy Cost	1,571	1,484	316	-87	-6%
	Waste Intermediately treated by Contract	66	40	3	-26	-39%
	Cost of Copy Paper Purchased	19	21	—	2	11%
Income	Trading of Recycled Valuable Articles	13	13	3	0	0%

■ Economy Effects Involved in Environmental Conservation

Unit: million yen

Grouping	Major Projects	Associated pages	Amount of Capital Investment				Amount of Cost			
			Domestic, FY2001	Domestic, FY2002	FY2003		Domestic, FY2001	Domestic, FY2002	FY2003	
					Domestic	Shenzen			Domestic	Shenzen
Cost inside business area	Prevention of Public Nuisance	Emergency shutoff gates, soil investigation	9	59	88	17	237	226	347	17
	Global Environmental Conservation	Energy saving (CO2 reduction)	52	57	344	9	24	22	119	2
	Resource Circulation	Zero emission promotion, waste disposal	15	46	14	0	153	151	277	3
In Upstream and Downstream	Promotion of green procurement activity	pp.19	0	0	0	0	9	13	43	0
Cost of Control Activity	Company-wide promotion, site promotion	pp.4-9	0	14	40	0	249	257	284	8
Cost of Research and Development	Development of technology for environment-friendly products	pp.16-21	1	0	0	0	297	316	225	0
Cost of Social Activities	Premises arrangement and tree planting	—	0	6	0	0	75	93	9	0
Cost for Damaged Environment	Measures for heavy oil spillage	—	0	0	0	0	0	2	1	0
Total			77	182	486	26	1,044	1,080	1,305	30

■ Cost of Environmental Conservation

Scope: Olympus Optical Co., Ltd. and affiliated production companies in Japan
 Period of calculation: April 1 to March 31 next year, each



Environmentally Conscious Products

In product development and design, it is important to evaluate environmental impact caused by all stages in the process flow from procurement of materials to disposal. Olympus operates product assessment to encourage development of products reflecting Environmental Awareness.

Environmentally Conscious Design

In 1992, Olympus organized an environment activity committee and started environment improvement for product packing and distribution. In 1997, it started product assessment to enhance product recycling. The concept was set out in an Olympus Product Assessment Guide in 1999 detailing the corporate position on energy saving of products and resource saving design.

As a critical implementation of the 02 Environment Basic Plan, Olympus reviewed chemicals control and Green Procurement, the introduction of LCA (Life Cycle Assessment) technology and establishment of an Olympus Eco-product Standard, a new Eco-products Standards in FY2003 to enhance environmental-conscious design.

Elimination of Hazardous Substances to ensure Environmental Protection and Security

A variety of chemicals is used in components and materials that make up products to ensure function, performance, and quality. To maximize safety ensuring that customers use Olympus products without worry and also to maximize safety during manufacture and minimize environmental burden of waste products, Olympus has promoted the elimination of hazardous substances contained in products and dangerous materials used in manufacture by gathering safety information on different chemicals in advance, and by anticipating laws and regulations. Lead-free production processes have been instilled and products using the technology will be produced in FY2004. We are promoting product-related measures that ensure environmental protection and security through substitution with safe chemicals such as adoption of lead-free lenses, elimination of PVC, use of low-toxicity rinsing antiseptic solution for medical services equipment, elimination of mercury, and adoption of application technology such as use of Trivalent Chromium Plating Baths and Powder Painting in products and manufacture.

In FY2003, we reviewed guidelines for the use of conventional chemicals and established standards over all Olympus products design, manufacture, and procurement into Olympus Environment-Related Substance Management Standards. The above concepts are reflected in the newly established Olympus Eco-products standards for practical operation.

Fiscal Year	Main Activities
1993	Olympus Environmental Principles was established. Company-wide environmental protection organization was reviewed. Products environment activity committee was set up to start product packaging and distribution improvement.
1997	The Company-wide 96 Environment Basic Plan was formulated. Company-wide environment manual was established.
1998	The Ina Plant obtained the first ISO 14001 Certification for the Olympus group. Product Environmental Assessment started.
2000	The company-wide 99 Environment Basic Plan was formulated. OISR Product Environmental Assessment Guideline was established.
2001	Green Procurement System was introduced. Research of Green Procurement started. Olympus Chemical Use Guideline was established.
2003	The Company-wide 02 Environment Basic Plan was formulated. Olympus eco-products standard was formulated. Product Environmental Assessment was reviewed. Olympus Chemical Use Guideline was reviewed. Olympus Environment-Related Substance Management Standards were established. Green procurement research was reviewed. New green procurement research was implemented in trial. LCA technology was introduced and implemented in trial.

■ Progress of the Environment Activities and Construction of Environment Design

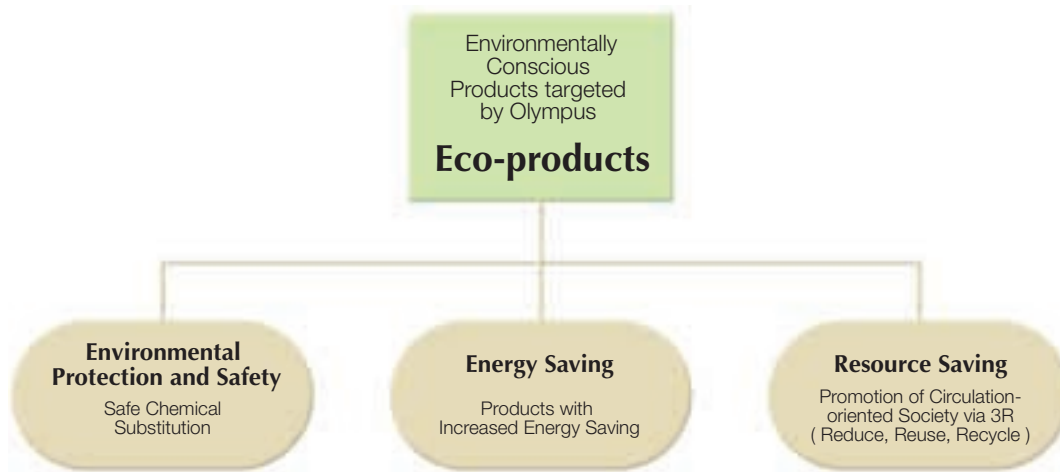
Division	Substances Contained in Products	Substances Used in Production Processes
Prohibited	<p>Must not be contained in Products</p> <p>Nine Substance Groups</p> <p>Cadmium Compounds Organotin Compounds Specified bromine-based fire Retardant Ozone layer depleting substances, etc.</p>	<p>Must not be used in Production Process</p> <p>30 Substance Groups</p> <p>Substances specified or regulated by Ozone Layer Protection Law Prohibited substances for prevention of soil and ground Water Contamination Dust specified by Air Pollution Control Law Class 1 Specified Chemicals by the law on the examination and regulation of manufacture, etc., of chemical substances, etc.</p>
Use Restricted	<p>Contents in products will be totally eliminated based on the Use Restriction Plan.</p> <p>Five Substance Groups</p> <p>Hexavalent chromium Compounds Lead Compounds Mercury Compounds, etc.</p>	<p>Use in Production Process will be totally eliminated based on the use restriction plan.</p> <p>Not Applicable</p>
Controlled Use	<p>Contents in products and the part in which the substance is used will be identified</p> <p>14 Substance Groups</p> <p>Arsenic Compound Beryllium Compounds Nickel Compounds Selenium Compounds, etc.</p>	<p>Situation of use during Production or Disposition inside Olympus will be recognized.</p> <p>Class 1 Substances specified by PRTR (Pollution Release and Transfer Resister) Law 354 Substances</p> <p>Excluding substances specified in the above divisions</p>

■ Standard Use of Environmental Substances

Eco-products

Setting up profile of Environmentally Conscious Products, which aims at creating new values, we started preparation for addressing creation of new Environmentally Conscious Products in FY2004 and after.

Environmentally Conscious Products targeted by Olympus



■ Schematic Diagram of Eco-Products

●Olympus Eco-product Standards

Olympus established Olympus Eco-product Standards based on “substitution with safe chemicals”, “increased energy saving products”, and “promotion of formulation of circulation-oriented society via 3R” as design standards for Environmentally Conscious Products.

Olympus Eco-product standards were formulated by setting a standard for 32 items that Olympus indentified as being suitable. Decisions were then taken as to the level of product assessment to be undertaken at all stages of planning, design, and trial manufacture of products.

●Olympus Eco-products Approval Committee

Starting from FY2004, the designation of eco-product will be given to products meeting eco-products requirements for applicable product categories, by in-house accreditation of environmentally conscious products.

A product developed based on standards for product categories and approved by a company-wide Environmental Approval Committee will be examined by the Olympus Environmental Approval Committee and approved by the Director in charge of the Environment. Once it is approved, the Olympus Eco-product will be given a mark on the products, and environmental information will be disclosed in catalogs and on the Olympus Web site.

Definition	Standard
Environmental Protection and Safety	<ul style="list-style-type: none"> • Substances prohibited or use-restricted in products • Enhanced Safety in use
Energy Saving	<ul style="list-style-type: none"> • Reduction of power consumption when in use
Resource Saving	<ul style="list-style-type: none"> • Lighter, thinner, shorter, and smaller products • Ratio of improved Recyclability • Discretion • Collecting/Recycling • Indication • Resource Saving in use • Resource Saving during Manufacture • Longer-life Products • Upgrading
Disclosure of Environmental Information	<ul style="list-style-type: none"> • Environmental impact assessment / information provision

■ Olympus Eco-product Standard



Environmental Approach to Product Design

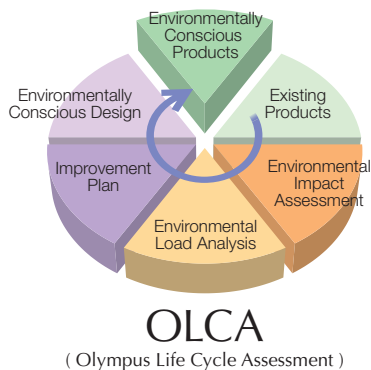
To assess environmental impact throughout product life, we will introduce of Life Cycle Assessment (LCA) technology. In FY2003, LCA was introduced company-wide as a trial for accumulating technological information.

Approach to LCA Introduction

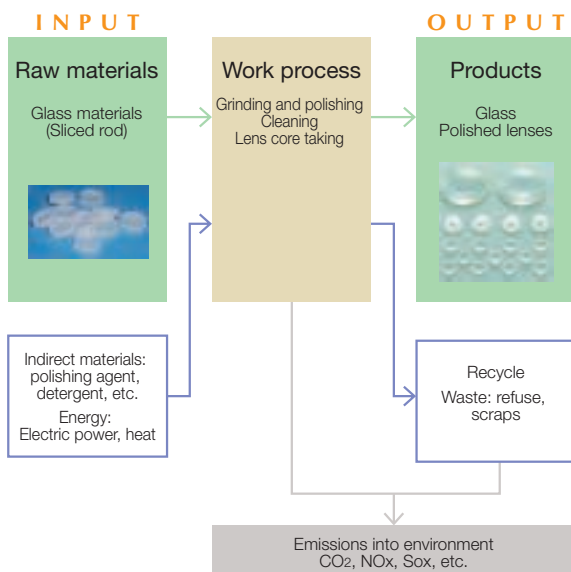
We addressed the introduction of LCA technology that objectively and quantitatively evaluates the load imposed on the environment by products to further minimize environmental load throughout the Product Life Cycle, including procurement of materials, production, distribution, use and disposition, and products design and production technology development.

We are working on introducing LCA technology capable of environmental load assessment during manufacture, which emphasizes assessment speed enabling quick feedback to product development, and which incorporates Environmental Load Unit Consumption (Life Cycle Inventory: LCI data) of major component processing and assembly in-house.

We will use LCA as an Olympus assessment system called Olympus Life Cycle Assessment (OLCA) in FY2004 and thereafter.



■ Diagram of Assessment using OLCA



■ Investigation of LCI Data in Work Process

Investigation of LCI Data at Production Stage

Life Cycle Assessment at the production stage uses Energy and Resource Consumption and Environment Emission as an assessment item, and uses unit consumption by LCI data investigation of all input and output, including feed materials, raw materials, indirect materials, energy, and waste in major processes such as glass, metal, and plastics processing, surface treatment, and assembly.

We are now accumulating unit consumption data to reflect actual operation by monitoring power consumption in each major process.

Process	Power Consumption (kWh)	Resource Consumption (kg)	Environment Emission (kg)
Grinding and polishing	120.5	5.2	0.8
Cleaning	85.3	3.1	0.5
Lens core taking	95.7	4.0	0.6
Assembly	110.2	4.5	0.7
Surface treatment	130.8	5.8	0.9
Material handling	70.4	2.9	0.4
Waste disposal	50.1	2.0	0.3
Energy consumption	600.0	25.0	4.0

Power Consumption Monitoring



Environmental load-measuring and evaluation tools are essential for creating eco-products and promotion of eco-management. It is necessary to integrate a process that quantifies the environmental load and promotes improvement in the task mechanism, such as when a product developer wants to reduce cost by estimating product cost or when a plant manager seeks to enhance productivity by recognizing production efficiency. To do this, we are now developing an easy-to-use LCA tool, OLCA (Olympus LCA), so all products and processes are evaluated by this tool and it becomes a measure of Environmental Management.



Masahisa Fukuda, group leader
Production Systems Clean Production
Systems Department
Production Engineering Division

Green Procurement

To ensure development and production of Environmentally Conscious Products, we are cooperating with suppliers to pursue procurement of materials and components with less environmental load based on new survey specifications of the Green Procurement Research Sharing Council.

Approach to Green Procurement

Olympus adapted Green Procurement in 2000. Since then, we have evaluated quality, price, and delivery time and approach to environmental protection of suppliers, which we used in environmental awareness at procurement. We must, however, reduce the environmental load from materials and components and effectively use resources to further promote the development of Environmentally Conscious Products. It is also imperative to abide by laws and regulations that control chemicals in products. Implementation of Green Procurement Research has become very important in reflecting information on chemicals that compose materials and components of products in product design.

We were successful in investigating environmental protection thanks to the cooperation of suppliers during two years of green procurement research. We wish to complete the investigation of materials and components.

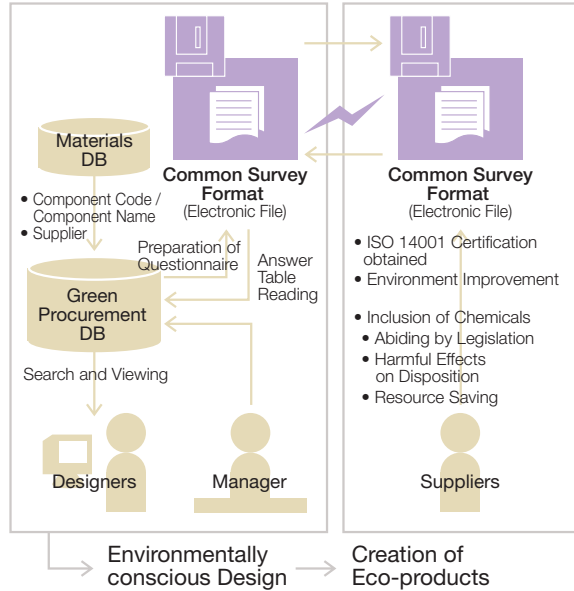


Participation into Green Procurement Research Sharing Council

We joined the Japan Green Procurement Survey Standardization Initiative (JGPSSI), a council that addresses industry standardization of Green Procurement research established by the Japan Electronics and Information Technology Industries Association (JEITA) and continues to work for new Green Procurement research sharing. Sharing of global Green Procurement research is expected to progress.



■ Questionnaire Form



■ Conceptual Diagram of new Green Procurement using Electronic Files (Supplier Evaluation and Survey of Environmental Substances)

Trial Implementation of new Green Procurement

Olympus was the first to target the trial as per council specifications. After internal briefing, we started briefing 550 domestic suppliers and 300 overseas suppliers in December 2002. We also demonstrated data entry using personal computers at some sites so suppliers could master answering and entering data.

At the trial, we conducted a survey on the level of approach to the environment of suppliers and a survey on chemicals based on council survey specifications using electronic information files.

Regular operation of new Green Procurement will start in FY2004.



Briefing of Suppliers on new Green Procurement



Examples of Environmentally Conscious Products

Olympus products have conventionally contributed to resource saving and waste reduction through production of more compact, lightweight items. We are committed to less power consumption of products as an important requirement for Environmentally Conscious Products.

Environmentally Consciousness in Digital Camera "CAMEDIA μ-10 DIGITAL"

Power and Resource Saving

A newly designed single-chip low-voltage-driven IC (Integrated Circuits) on the motherboard ensures high-density mounting. The lens zoom motor uses a low power consumption, high torque motor. We could realize sharp power saving when the digital camera is in service and more resource saving using a smaller motherboard.



More Compact Optical System

A triple-time zoom lens features weight and volume reduced from the conventional 8 components in 7 groups to 5 components in 3 groups. The number of lenses is substantially decreased in aspherical lens design and glass molding, which helps promote energy and resource saving in manufacture. The finder optical system is made compact to halve its size.



Low Power Consumption Design enabled Water Resistance in Daily Use

Low power consumption lowered heat reduction during camera use, which helped protect the image pickup device from heat, and thus enhanced level of waterproofing was possible in the Digital Camera.

Adoption of Lead-free Lens

Lead-free Glass is used in all lenses and other optical glass.



Mercury-free Liquid Crystal Backlight

The backlight source uses a white ray emission diode, which enabled us to eliminate mercury from the liquid crystal monitor.

Resource Saving by Use of Secondary Battery for Power Supply

A new lithium ion secondary battery capable of about 300 charges and discharges enabled further resource saving. As a member of JBRC (Japan Battery Recycle Center), we are promoting the collection of used batteries and more recycling.



Other Examples of Environmental Awareness

Material identifying indications are affixed to major plastics components to allow easier separation. We are working to totally eliminate Styrofoam cushioning materials, paper reduction by use of product instructions on CD-ROM, and use of recycled paper.



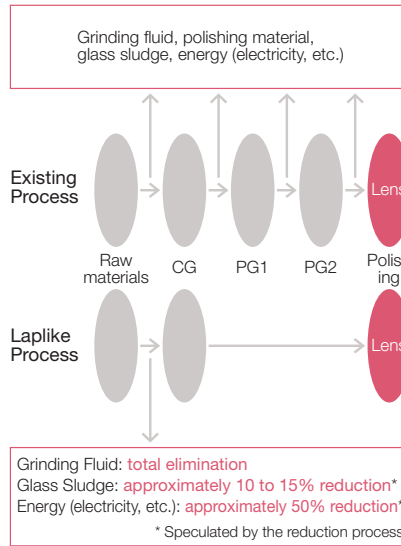
Examples of Environmental Technology Development

Olympus is committed to development of products, manufacture technology and positive introduction of application technology that minimizes the impact on the environment during the product life cycle.

Technology of standardized Lens grinding and polishing

Olympus has developed standardized grinding and polishing technology, called the “Laplike Method”, which reduces the lens grinding and polishing process and does not use grinding fluid.

It features a whetstone with diamond powder blended in its specific binding material, which causes surface electric potential in liquid. When this whetstone grinds out a lens, silica nanoparticles from the polishing fluid are absorbed by the binding material, and the lens is polished to a mean roughness of 0.03 μm or less. This eliminates downstream precision grinding. The introduction of this technology halved facility and installation space, enabled energy saving of 50% due to reduced work hours, reduced glass sludge by 15%, reduced industrial waste, and totally eliminated ethylene glycol grinding fluid.



■ Laplike Processing Mechanism and Effects

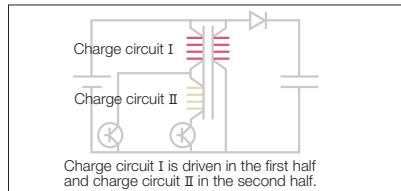


Takayuki Kishida
Ultra-precision Technology Department
Production Engineering Division

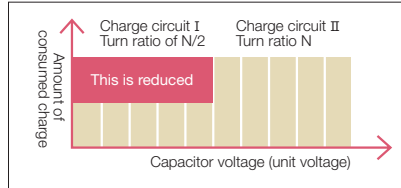
“The Laplike method was born from field needs, reforming lens manufacture methods, and I was convinced that cost reduction would reduce the environmental load.”

Energy Saving and Flash Recharging Circuit with 25% Power Consumption Reduced

Olympus’s unique energy saving flash recharging circuit design enabled us to reduce electricity consumed by a charging operation by about 25%. This technology selects charge circuits with different winding ratios based on the charge voltage and obtains capacitor voltage and charge required for light emission, minimizing current consumption of the battery. The charge circuit was also made compact, and has been used in film cameras. Due to constant improvement, a second-generation energy saving flash with a short charge time is used on new products.



■ Energy saving flash recharging



■ Electricity consumed by Battery per unit Voltage

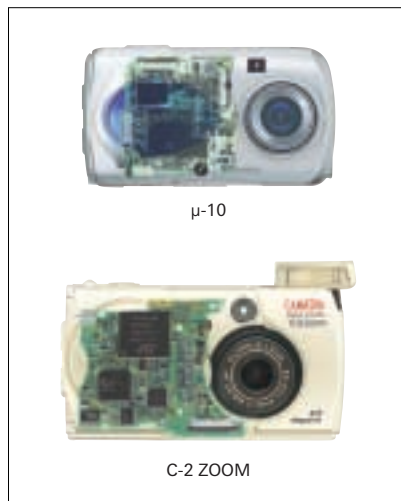


Keiichi Tsuchida
R & D 3 Department
R & D Division Imaging Systems Group

“I would like to apply this technology to digital cameras that require much more energy saving.”

ASIC (Application Specific Integrated Circuits) for Digital Camera Power and Resource Saving

Environmental impact assessment of digital cameras by LCA showed that the energy load factor during camera operation in the total life cycle of products is high and energy saving design was thus an important issue in product development. Olympus developed an ASIC for digital cameras for quick processing and low power consumption based on high efficiency image processing and energy saving IC design. We are on the way to ultimate design for more energy and resources management resulting from reduction in size and weight when in operation.



■ Single-chip Energy Saving Motherboard



Akira Ueno
SOC Technology Department
Research and Development Division Corporate R & D Center

“I am dedicated to realizing more functional ASICs and lower power consumption to make a more power-saving, smaller digital camera. I want to apply the technology that I have acquired here to other products.”



Environmental Consciousness in Product Packaging and Distribution

Olympus is promoting reduction of materials used in product packaging, use of regenerated resources and smaller packaging to ensure reduction of the environmental load caused by product packing and distribution. The standardization of distribution bases of the Olympus Group is the next target for reducing the environmental load entailed by distribution.

Approach to Environmental Product Packaging and Distribution

In the area of product packaging, we are shifting toward materials having high packaging functions and quality, reliability, disposability, and convenience, and for which recycling infrastructures are already in place, and use of recycled materials, more adequate packaging design, and development of packaging design technology. In distribution, we are working to reduce the environmental load in the total logistic operation, including direct delivery from manufacture bases; transport packaging suitable to the change in the distribution environment due to automatic delivery sorting; and energy saving and higher efficiency through modal shifts, etc.

To improve packaging and distribution, we are now :

- Changing Materials
- Changing the Shape of Corrugated Cardboard Boxes
- Considering Recyclability
- Considering Packaging Design in Transport Environments
- Constructing Distribution taking the Environment into Consideration

Trends in Product Packaging

Since we set up a Packaging Environment Committee in fiscal 1992, we have promoted the 3Rs — Reduce, Reuse, and Recycle — for product packaging materials and seek to reduce packing volume and Styrofoam 30% in packaging design technology, which is called “Slim 30”.

We are also addressing shifts in materials to cardboard, pulp mold, and film packaging material whose recycling infrastructure is in place and promoting 3R design and i) use of recycled materials as cushioning materials to replace Styrofoam ii) exclusion of organic solvent from printing iii) surface processing and packaging design with less environmental load through LCA.



Endoscope Carrying Case made of Cardboard



MO Cushioning Material made by Pulp Molding



Film Packaging used for Microscope Cushioning Material



Water-based Ink Printing on Packaging of Analyzing Reagent



Improvements of Distribution Packaging

Delivery packaging underwent the following improvements: Disposable 10-piece cardboard boxes were previously used for transport of endoscope procedural tools produced at Aomori Olympus. However, those boxes were replaced with “returnable boxes”, that is, collapsible containers. This enabled an annual 17-ton reduction in cardboard from previous use of about 2,400 boxes per month.

As for endoscope packaging, the cleaning device used to be

packed in cardboard. However after repeated trials, we confirmed that packaging could be reduced to a plastic bag and then, several products are transported in a Combination Container. In the Combination Container, a slope made of corrugated cardboard fills excess space between cleaning devices in the box. Thanks to use of the cardboard slope, we can fill excess space between cleaning devices in the box. The cardboard slope helps us move devices into and out of the combination container efficiently. This non-packaged transportation is expected to reduce annual cardboard use by 5 tons.



Use of Collapsible Containers



Non-packaged Cleaning Device



Use of Slope

Improvements of Distribution

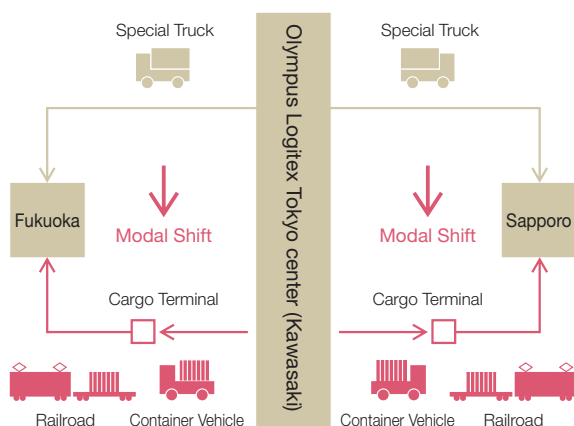
Since Blood Analyzers are large precision devices, they used to be transported by special trucks to ensure quality. During our approach to logistics improvement, however, we found they could be transported safely by plane or rail. We switched transport to distant metropolitan areas such as Sapporo and Fukuoka from special trucks to rail whenever lead time permits. This alone amounts to a 93% reduction in CO2 emission.

Together with ongoing packaging material improvements,

this case was presented in “All Japan Logistics Improvement Case Study Convention 2003” held on April 23, and was awarded a prize for effort in logistics streamlining.



Presentation at Logistics Improvement Case Study Convention



■ Modal Shift for Blood Analyzer Device

We struck a balance between environment improvement and cost reduction in two phases, both in packaging materials and transport means. People tend to think environmental measures must be costly, but this case enabled us to reduce costs due to environment improvement. Breaking through an established maintenance of the status quo requires undying persistence. I speak from my experience.

Michiro Sakai
Director, Certificate Logistics Senior Master
Olympus Logitex Co., Ltd.



Energy and Resources Management

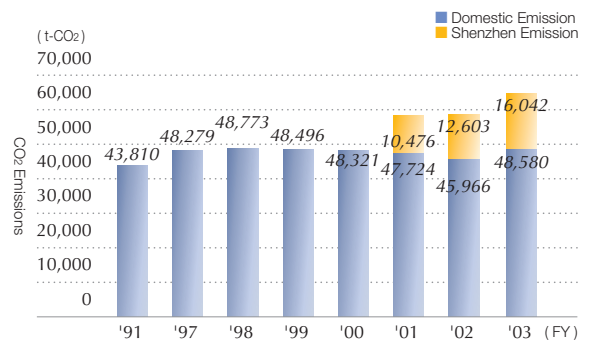
We are promoting energy saving measures to reduce Global Warming and CO₂ Emissions
Our expanded production increased energy consumption in FY2003.

Transition in Total Energy Use

In FY2003, the Olympus group clearly defined its target of a 6% reduction by FY2011 (for FY1991) based on the greenhouse effects gas reduction planned target adopted in the Kyoto Protocol of the Framework Convention on Climate Change. Since the majority of greenhouse gases the Olympus group emits is CO₂, reducing such emission will directly result from energy saving. Until now, we could see effects owing to measures by “grass-roots activity” in each facility. We consider overseas development of the production system to be a reason for such reduction. Reducing CO₂ Emissions is a global problem, and we must consider a reduction plan that include overseas production bases, rather than simply focusing on activities in Japan. It thus appears difficult to attain the target with conventional energy saving measures.

Domestic energy use in FY2003 was 48,580 ton CO₂, showing a 5.7% increase in the absolute value (not by points) for the previous year. The unit consumption to sales ratio, almost leveling off. This year, we began dealing with the amount of energy use from FY2001 to 2003 for the Shenzhen Plant in China, the largest overseas production base. Because

of the increase in overseas production in FY2003, the amount of energy use, including the Shenzhen Plant, was 64,622 tons of CO₂, showing an increase of 10.3% over the previous year.



* We calculate the CO₂ emission factor for Shenzhen similarly to domestic cases using the factor for FY2000 prescribed in the Law concerning the Promotion of the Measures to Cope with Global Warming*.

■ Transition in CO₂ Emissions

Items	Unit	FY1991	FY1999	FY2000	FY2001	FY2002	FY2003
CO ₂ Emissions	t-CO ₂	43,810	48,496	48,321	47,724	45,966	48,580
Amount of Energy	Terajoule	1,084	1,208	1,200	1,194	1,159	1,198
Net Sales	100 mil. yen	1,574	2,574	2,794	3,129	3,283	3,464
Unit Consumption to Sales	t-CO ₂ /100 mil. yen	27.8	18.8	17.3	15.3	14.0	14.0
Unit Consumption to Sales (100 in FY1997) %	%	-	79	72	64	59	59
Crude Oil Conversion Basis	kiloliters	28,069	31,280	31,054	30,910	30,000	31,012

* CO₂ emissions: CO₂ emissions for each year are calculated on the basis of factors specified in the FY2000 Regulations for the Law concerning Promotion of Measures to Cope with Global Warming..

* Conversion to Joules: For electrical power, factors specified in Regulations for the Law concerning Rational Use of Energy are used for each year but for other types of energy, factors specified in Overall Statistics about Energy is used.

* Conversion to crude oil: Conversion is conducted on the basis of factors specified in Regulations for the Law concerning Rational Use of Energy.

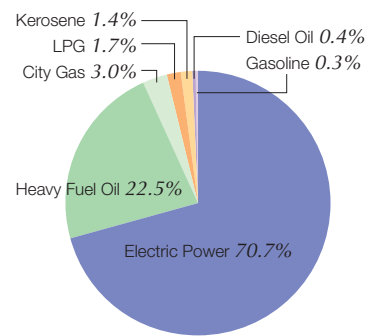
■ Energy Consumption and Energy Consumption per Unit of Net Sales

Example from Aizu Olympus

Aizu Olympus had a problem of solar heat through the plant building roof that placed a substantial load on the air conditioning system. To solve this problem, roof insulation was implemented over a roof area of 836 m² when constructing a new cleaning room. This reduced heat from outside entering the building.

The enhanced insulation and made an output reduction of

16kW in cooling requirement, bringing a reduction annually of 103,680 kWh.



■ CO₂ Emissions by Type of Energy Source in FY2003



Insulation is placed on the Roof of Cleaning Room



Example from Ina Plant

● Remodeled Air Conditioning System with High Efficiency Equipment

To replace conventional cold water package air conditioners and cooling towers, the Ina Plant introduced an absorption water chiller/warmer in high-efficiency thermoelectric equipment, cooling tower and air conditioning units, which is capable of leveling the power load and corresponding to seasonal variation. This replacement brought a 360,000 kWh reduction in annual electricity consumption. This facility can switch fuel from heavy oil to natural gas and a cogeneration system can be integrated if the infrastructure includes natural gas consumption



Cooling Water Pump with Higher Efficiency



Absorption Refrigerator

● An inverter-controlled compressor has been introduced

To perform tracking control in real time of air conditioning demand, an inverter-controlled device has been installed. This could exclude the loss of unloader, thus enabling an energy reduction of 460,000 kWh.



Inverter-controlled Compressor

● Introduction of Power Monitor

We introduced an electricity monitor that works on the internal LAN, enabling electricity consumption to be controlled in individual workplaces, saving energy.



Power Monitor

The Ina Plant was awarded the Director-General of Agency of Natural Resources and Energy prize.

This year, the Ina Plant won this prize — thanks to personnel cooperation in energy saving. We will continue to address energy saving, aiming for higher standards.



Sadayuki Ono (left) and Satoshi Mizutani admiring the prize General Affairs group

Example from Hinode Plant

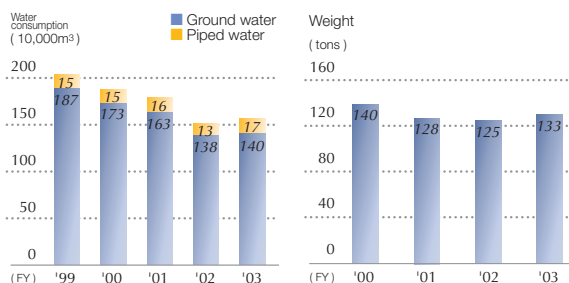
The Hinode Plant used to compress air using three air compressors. Depending on the pressure situation, one compressor was in standby operation, consuming power running with no load. This was replaced by two smaller compressors capable of on/off operation. This eliminated unnecessary standby electricity, reducing electricity consumption 3,036 kWh a year.



Small Compressors at Hinode Plant

Resource-Saving Activities

Total Water Consumption was 1,570,000 m³ in FY2003, showing an increase of 4% over the previous year. Copy paper used was 133 tons, a 6% increase over the previous year.



■ Transition in Water Consumption

■ Transition of Total Consumption in Copy Paper

Waste Management and Recycling

In FY2003, we worked for the first year to implement the O2 Basic Environmental Plan, prioritizing Zero Emissions. The amount of intermediate treatment of waste by contract showed a decrease of 683 tons from the previous year and the Recycled Resource Ratio was 76% in FY2003.

We are determined to achieve Zero Emissions

Focusing on facilities at which production is high, the number of personnel is high, and much of waste is discarded, we reviewed separating unrecyclable waste and recyclable waste whose infrastructure was already in place.

We identified how each branch was to attain a landfill ratio of 1% or less, which is the criterion for zero emissions, and intensively promoted reduction of waste volume and resource recycling. Some facilities achieved this landfill ratio in a month in the latter half of FY2003.

In FY2004, we will set up methods and rules for examination, aiming at zero emissions in major facilities.

Idea of Waste Origination to Final Disposition

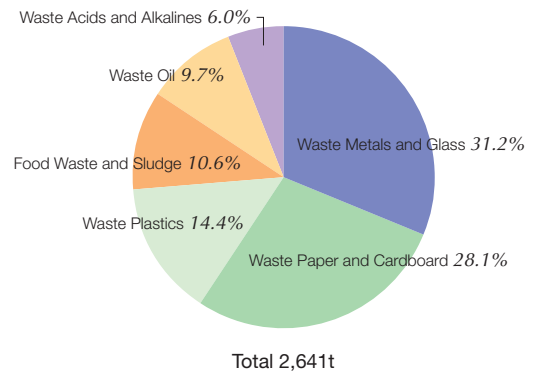
Olympus prioritizes reduction of the amount of final disposal, and its criterion for zero emissions is to reduce the volume of landfill after intermediate processing within 1% or less of total amount of emissions” (“Volume of landfills, C1” in the diagram below).

Olympus encourages volume reduction treatment such as Drying and Resource Recycling and Waste Liquid Regeneration in-house to reduce waste (amount of emissions produced) more intensively.

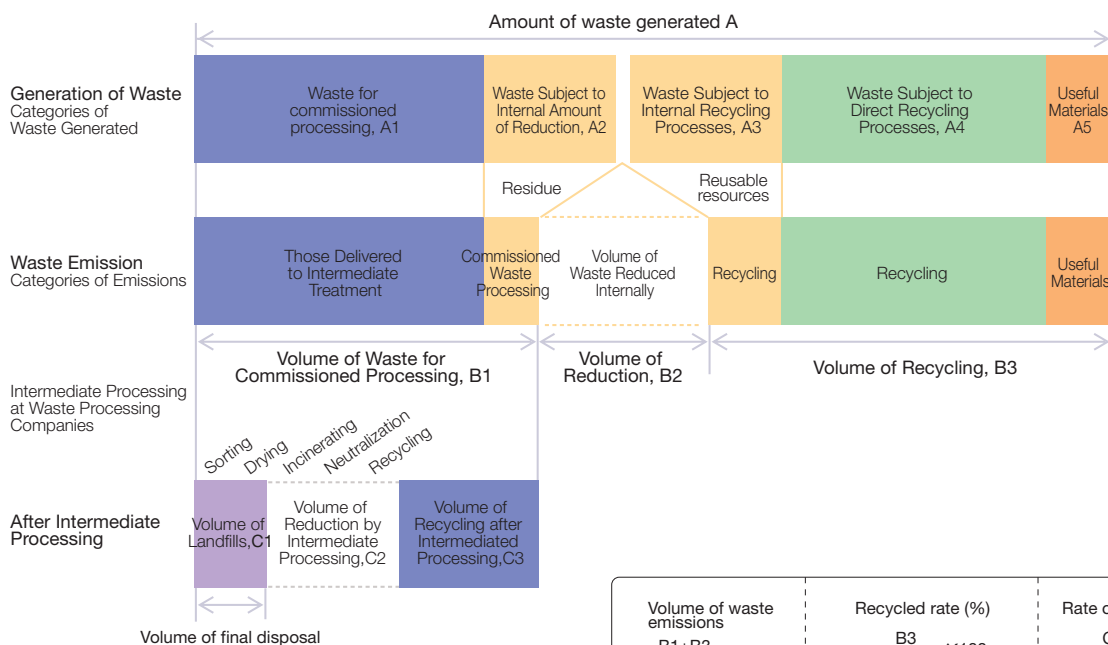
Amount and Rate of Recycling in FY2003

Olympus counts the amount of resources recycled as the amount of those reused as resources for recycling by facilities or by outsourcing contractors out of total emission materials at each facility. This includes materials sold out as valuable resources.

The amount of resources recycled in FY2003 was 2,641 tons, up 721 tons (38%) from the previous year. This included 268 tons of materials sold out as valuable resources, and the Recycled Resource Ratio was 76%, improving 20% over the previous year.



■ Breakdown of Amount of Recycled Materials

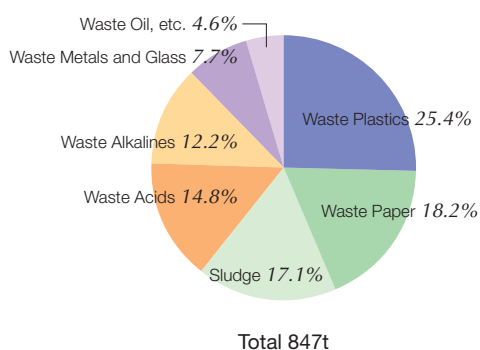


Volume of waste emissions = B1+B3	Recycled rate (%) = $\frac{B3}{B1+B3} \times 100$ (Calculation method of Olympus)	Rate of landfills (%) = $\frac{C1}{B1+B3} \times 100$
--------------------------------------	-----------------------------------------------------------------------------------------	----------------------------------------------------------

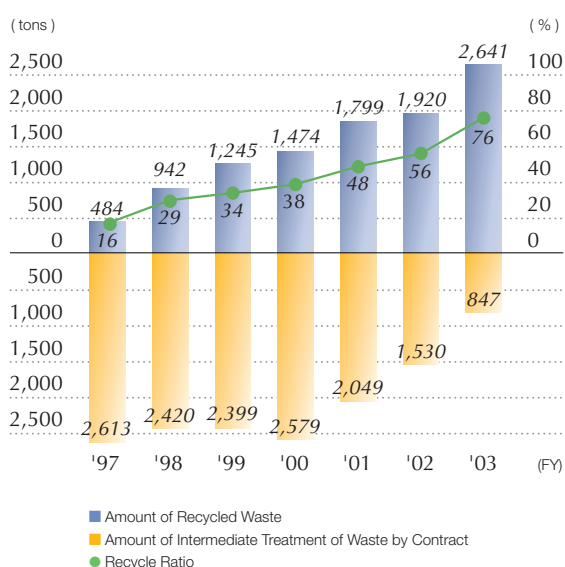
■ Category Grouping of Wasted at Each Phase from Generation to Final Disposal

Transition in Commissioned Waste Processing

We focused on reuse or internal circulation, mainly of lens sludge, waste plastics, and waste acids and alkalis, which are emission materials characteristic to the company to further reduce commissioned waste processing. The total volume in Domestic Development and Production Facilities in FY2003 was 847 tons, a reduction of 683 tons (45%) over the previous year and 1,766 tons (68%) over the reference year (FY1997).



■ Breakdown of Commissioned Waste Processing



■ Transition in Amount of Recycling Materials and Commissioned Waste Processing

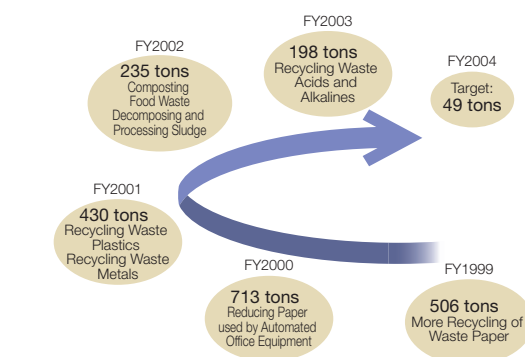
Hachioji Recycling Center

A year has passed since the recycling center started operation at the Technology Research Institute (Hachioji) on March 12, 2002.

The former waste collection depot has been totally renovated into a temporary storage space with wide frontage having total floor area of 263 m², including the second floor, to allow easy storage of large waste. Garbage-processing compost (high fermentation) equipment started operation in June 2001, and now operates 24 hours a day to process food waste from catering for about 3,000 personnel at the center.



Hachioji Recycling Center



■ Technology Research Institute's Concept of Reducing the Volume of Waste for Commissioned Processing

Thorough Separate Collection at Tatsuno Plant

The Tatsuno Plant separated waste into 52 types until October 2002. In December, however, it reviewed this and increased separation categories to 82 for a higher recycled resource ratio promoting resource recycling.

Since the Tatsuno Plant includes temporary staff dispatched from overseas, Examples of actual waste and photographs of the waste are placed on each separation container so that people can identify the suitable container at a glance.



Separate Collection at Tatsuno Plant

Chemicals Management

A variety of chemicals in manufacturing processes and in products, and some are hazardous to the environment and health. Olympus is focusing on accident prevention and reducing emissions into the environment.

Chemical Usage Standards

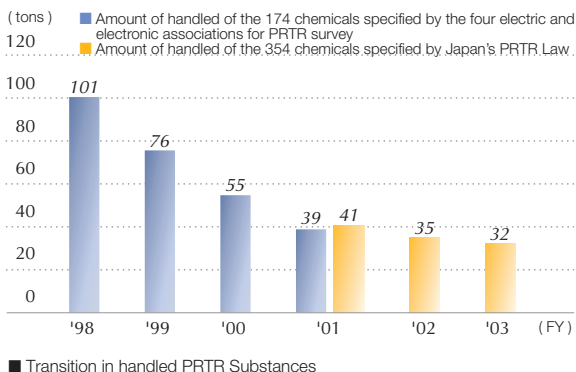
In FY2003, Olympus set up a new classifying system consisting of Prohibited, Restricted (reduced as much as possible), and Controlled (careful managed use) based on the degree of harmful effects for use as a component in products and use in manufacture processes.

PRTR Surveys

The Olympus group has been recording emitted and transferred chemicals since 1997 based on the guideline of four electric machinery and electronic organizations. Based on the pollution Release and Transfer Register (PRTR) Law, we surveyed 354 items of Class 1 substances subject to the law in FY2003. Chemicals handled in quantities more than 10 kg a year were picked up at each branch, and substances that were handled in quantities of 100 kg or more in total for all branches were summarized. Substances subject to the PRTR Law amounted to 31.77 tons in FY2003, a reduction of 3.76 tons over the previous year.

Category	Chemicals Contained in Products	Chemicals used in Manufacturing Processes
Prohibited Chemicals	Cadmium, Organotin Compounds, PBB, PBDE, PCB, Polychlorinated Naphthalene, Asbestos, Azo Compounds, Ozone Layer Depleting Substances	CFCs, Halon, Carbon Tetrachloride, HCFC, HBFCs, Methyl bromide, Dichloromethane, Tetrachloroethylene, 1,1,1-Trichloroethane, Trichloroethylene, cis-1,2-Dichloroethylene, Benzene, Asbestos, Aldrin, Endrin, Chlordane, Dieldrin, Hexachlorobenzene, Polychlorinated Naphthalene (only those with number of chlorines being 3 or higher), DDT, PCB, Bis (tri-n-butylchlorostannane) =Oxide, Amosite, Crocidolite, Bis (chloromethyl) ether, 4-Amino Biphenyl, 4-Nitro Biphenyl, Benzidine, β -Naphthylamine
User-restricted Chemicals	Hexavalent chromium, lead, mercury, polyvinyl chloride, cyan compounds	
User-controlled Chemicals	Antimony, Arsenic, Beryllium, Bismuth, Chromium, Cobalt, Nickel, Selenium, Tellurium, Thallium, Chlorinated Paraffin, Other Bromine-based Fire Retardant, Phthalic Acid Ester, Radioactive Substances	354 Chemicals specified in Article 1 of Japan's PRTR law (excluding chemicals listed above)

■ Chemical Substance usage Standards



■ Transition in handled PRTR Substances

Code by the law	Chemicals	Amount Handled	Volume Released			Volume Consumed	Volume Recorded	Volume Removed	Volume Recycled	Volume of Landfill
			Air	Water Area	Soil					
30	Epoxy resin of bisphenol A-type (liquid)	0.29	0.01			0.20		0.07		
40	Ethyl Benzene	0.14	0.11					0.03		
42	Ethylene Oxide	3.64	0.78	0.06			2.81			
43	Ethylene Glycol	0.68	0.32	0.01				0.35		
63	Xylene	4.24	2.71					1.53		
69	Hexavalent Chromium Compounds	0.48				0.03	0.02	0.43		
101	Acetic acid 2-Ethoxyethyl	0.31	0.02			0.10		0.19		
145	Dichloromethane *1	0.36	0.23					0.13		
207	Copper water-soluble salt	0.13		0.04		0.05		0.05		
211	Trichloroethylene *1	0.47	0.47							
224	1,3,5-Trimethyl Benzene	0.16	0.16							
227	Toluene	11.64	9.54							
230	Lead and its compounds	5.56				2.91		1.74	0.91	
231	Nickel	0.36		0.03		0.23		0.09		
232	Nickel compound	1.69	0.01	0.26		0.67		0.76		
283	Fluorine and its compounds	0.45						0.45		
304	Boron and its compounds	0.27		0.04		0.02		0.21		
307	Poly (oxy-ethylene) = Alkyl Ether *2	0.63		0.06				0.57		
309	Poly (oxy ethylene) = Nonyl Phenyl Ether	0.27		0.01			0.19	0.08		
Total		31.77	14.36	0.52	0.00	4.21	3.01	8.77	0.91	0.00

*1 Dichloromethane, trichloroethylene, nickel compounds (including nickel sulfate) are subject to survey of noxious substances.

*2 Limited to those with number of carbons in alkyl base radical is 12 to 15 and their mixture.

Totals may not correspond to the actual sum due to rounding off.

■ PRTR Survey Results

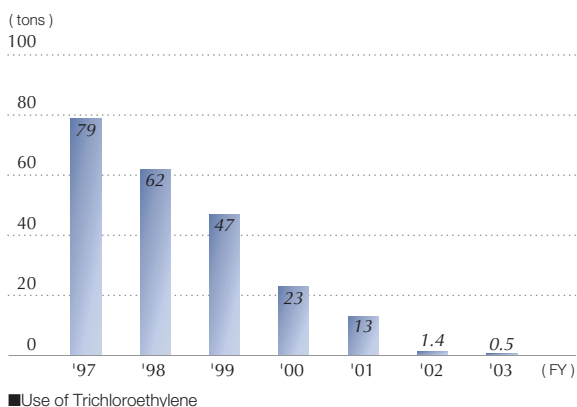


Reducing Organic Solvents

Olympus uses dichloromethane and trichloroethylene as chlorine-based organic solvent. Trichloroethylene was used as a lens overcoat dilution solvent at the Ina Plant. Although we did not have any other solvent whose performance is comparable to the solubility and drying ability of trichloroethylene, we were considering switching to some other solvent that affected the environment less. We selected butyl acetate-based solvent that dissolves pitch, which is the base agent of the overcoat, to replace trichloroethylene, but its low flash point involved the risk of explosion and fire. To solve this problem, we took the following measures:

- Changed the exhaust fan of the agent-applying booth to explosion-proof specifications, and
- Continuously checked for blocking of filters in booths,

thus totally eliminating trichloroethylene in manufacture processes in March 2002.



Eliminating Ethylene Glycol

Olympus has focused on finding substitutions for and eliminating ethylene glycol, used on the automatic lens processing line. It was difficult, however, to find a perfect alternative that “operators can use safely”; when we used a promising substitute actually in the field, unexpected problems resulted although the experiment had resulted in good performance. We solved this problem by using “Gracool” to eliminate 530 kg ethylene glycol in a year.

Powder Painting Decreased Solvent Use

Olympus mainly uses organic solvent for general painting. The portion remaining as coating of products is about 15% and other portions are waste plastics (40%) and xylene (45%), which is a volatile organic chemical substance, are emitted into the atmosphere. Painting of organic solvent involved the following problems:

- 1. Waste plastics:**
Annually about 5 tons of waste plastics are produced. Sludge must be treated as part of facility maintenance.
- 2. Organic solvent emitted into air**
A variety of organic solvents was in paints and thinners used in the process, and most solvents were emitted into the atmosphere.
- 3. Drain treatment**
A massive volume of water was used in the solvent painting facility (water booth), which required processing in external treatment facilities.

To solve these problems, Olympus, in cooperation with a paint manufacturer, developed a unique powder paint especially for microscope components. This powder painting technology features luxurious appearance specifications (grain leather pattern) and synthesis of resin that permits low temperature baking. We thus complete painting with zero emissions of paint waste or organic solvent into the air and reduced annual use of xylene by 1.7 tons.



Powder Painting Room at Ina Plant



Automatic Lens Processing Line

Social Contribution

Based on Social IN management philosophy, Olympus is positively committed to activities that contribute to society.

Exchange Athletic Festival

The 19th Exchange Athletic Meeting was held in the Fujimori Park athletics stadium in Hachioji, Tokyo in October 2002. Olympus staff members also took part as volunteers. On the athletic field, they volunteered to support the disabled, and joined various events to deepen rapport.



Staff Members Participating as Volunteers

Children's Nature Watch Contest

To foster scientific minds in elementary and junior high school students, a Children's Nature Watch Contest has been held every year since 1960 sponsored by the Japanese Ministry of Education, Culture, Sports, Science and Technology. Olympus has supported this contest from the first one. Students addressed "Why?" and "How?" questions about nature and created wonderful work every year. The number of contributions has increased every year, and in the 43rd contest, entries totaled 4,633, including 4,084 works from elementary school students and 549 from junior high school students. Exhibits and part of the award ceremony may be viewed at <http://www.shizecon.net/>. (Japanese)



Poster

Welfare Festival

In May 2002, Hachioji city held the 19th Welfare Festival, in which Olympus also exhibited experience products in a booth. Visitors had hands-on experience with endoscopes and microscopes, which were unfamiliar to them. Olympus will continue to cooperate with local communities through such exchanges as this.



Local people Examining Olympus Products

Youth Science Festival Parents and Children enjoy the Wonders of Science

In August 2002, a Youth Science Festival was organized at the Science Museum, Tokyo. The Olympus booth featured a sample being observed using MIC-D, a digital microscope, and was very well received by visitors. At the festival site, projects awarded prizes in the 42nd Natural Science Observation Contest were displayed, and drew attention from visitors of all ages. Olympus will continue to provide occasions such as this for children to experience science.



Awarded Works on Display

Nature in Japan Photograph Contest

This year witnessed the 20th Nature in Japan photograph contest, which Olympus has cosponsored since the start. Under the theme of "Japanese nature that should be conserved forever," 7,669 entries were submitted, including 7,030 works in the Documentary division and 639 in the Photo Art division. A commendation ceremony was held at the Tokyo Head Office of the Asahi Shinbun in June 2003. Photograph albums of prize-winners are to be released in mid September.



Awards Ceremony in 2002

Charity of Olympus Optical Co. (Europe) GmbH

Rains and flooding in central Europe in August 2002 extensively damaged vast areas of Germany, Austria, and the Czech Republic. Olympus provided Benewiz and Witting, two small corporations, with a donation of 10,000 Euro in aid. We asked the Chamber of Commerce and Industry in Saxony, to obtain a list of all companies which were severely damaged in the region. After talking to all of them, two companies, which needed help most, were selected.



Giving a Donation to Severely Damaged Corporations



Supporting Young Photographer of the Year Contest by RSPCA of the UK

Olympus UK co-hosts a photograph contest for Young Photographer of the Year annually together with the Royal Society for the Prevention of Cruelty to Animals (RSPCA), a British organization. Olympus UK has supported this event for more than ten years by giving cameras to winners and preparing winning photographs to be displayed in the exhibition held in London. This contest targets those 18 years old or younger to help them understand the significance of human coexistence with the environment and wild animals through photographs. Some 6,000 entries were accepted in the year, and an award ceremony was held in December 2002.



Prizewinners

Contribution to the Essex Wildlife Trust

KeyMed is active in the local community and has participated in a number of local projects aimed at enhancing the area. As an example KeyMed is a significant contributor to the Essex Wildlife Trust. The Trust was established in 1959, and depends on membership subscriptions, donations and legacies as well as contributions from business to fund the majority of its work. The Essex Wildlife Trust looks after 2,800 hectares of land on 92 nature reserves in Essex, spending nearly £1 million each year caring for wildlife and encouraging others to do the same. In 2001 EWT taught over 27,000 children about wildlife at its Visitor Centers and in schools so that the next generation will understand the need to preserve wildlife and the environment.

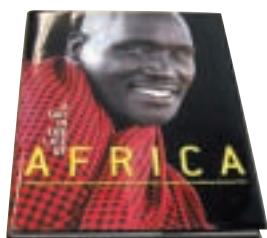


Wildlife and Environmental Education

Supporting A Day in the Life of Africa, a Photography Event

A Day in the Life of Africa is an event in which 100 famous photojournalists from 21 countries spread out in 53 countries on the continent of Africa to take pictures of life in all African regions on February 28, 2002. As the main sponsor, Olympus provided all-out support through product donations and training in the use of equipment and materials. Finished photos were published in a photograph collection in October 2002, and all proceeds went to a fund for an African AIDS education program. Olympus held an exhibit to display 250 selected photographs at the Tokyo Metropolitan Museum of Photography between June 14 to July 13, 2003. For information on A Day in the Life of Africa, please see:

<http://www.ditlafrica.com> (English)



Photograph Collection

Assistance to the World Wildlife Fund via Olympus Calendar

Targeting Earth-friendly technology, Olympus has long advocated the importance of environmental protection and cooperated with the World Wildlife Fund (WWF) Japan, the world's largest private nature protection organization, famous for advertising recognition of valuable nature. As part of this, we donate nature photo calendars featuring photographs of wild animals to WWF Japan. The 2003 edition is the 18th and features Children of Wild Animals -- photographs taken around the world by Mitsuaki Iwago, a wildlife photographer, reflecting his message of commitment to conserving nature. The WWF is engaged in a wide range of nature protection activities such as protection of endangered wild fauna and flora and their habitat, preservation of forests and marine waters, and environmental education.



Olympus Calendar 2003

Environmental Communication

Olympus communicates with citizens of local communities by sending out environmental information and taking part in community events.

Environmental Reports

In September 2000, the Olympus Group published the first issue of the Environmental Report in Japanese and English, followed by similar issues in FY2002 and 2003. The fourth issue was published this year. The Environmental Report is edited by the Environmental Development Department in cooperation with corporate divisions. In addition to distributed copies, the Environmental Report may be accessed at the Olympus Web site at:

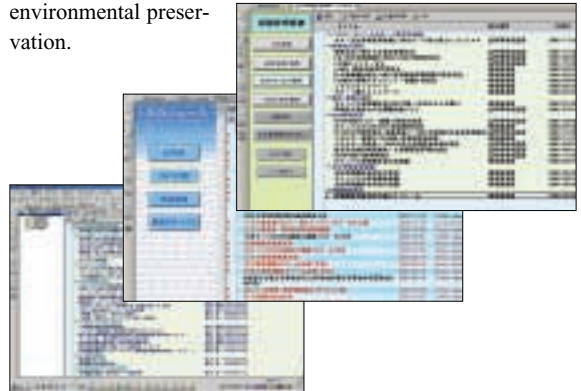
<http://www.olympus.co.jp>



Environmental Report 2002

Internal Environmental Information Database

Environmental information collected by Environment Promotion Divisions of Head Office and branches and departments is gathered and standardized in a database to be shared via groupware that all employees can access. This enables employees to learn about in-house environment rules and detailed information on how their colleagues are committed to environmental preservation.



Internal Database Displayed on Monitor

Participation in Environment Festa in Aizu

Aizu-Wakamatsu holds an Environment Festa in Aizu every year, including the tenth anniversary in September 2002. Aizu Olympus participates in this event every year, this year holding a panel exhibit on environmental protection in the Olympus group such as resource and energy saving and waste recycling. At the booth, staff members distributed free organic fertilizer, "Eco Yuuki," made from the corporate canteen. Staff members also gave those who answered the environment quiz photographs shot with a Olympus digital camera and printed on Print-Club seals.



Olympus Booth at Environment Festa

Involvement in Community Activities

Every Olympus branch is engaged in community activities. Branch cleaning is conducted several times a year and involves all employees. After working hours at the Technology Research Institute in Hachioji, personnel split up into groups to clean the branch grounds, roads, parks, and other community spaces. In Aizu Olympus, participants raised a healthy autumn sweat with a walking for fitness promotion while enjoying the landscape along the 10 km course around the Agagawa River near the Kita-Aizu plant. This was conducted in parallel with the walking campaign held by the Olympus health insurance society. After finishing the course, participants joined in cleaning up rivers, streams, and roads.



Cleaning in Hachioji



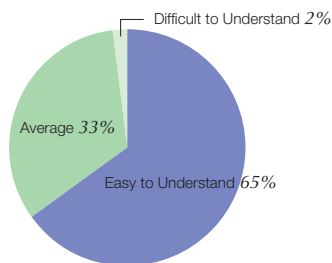
Cleaning by Aizu Olympus Employees



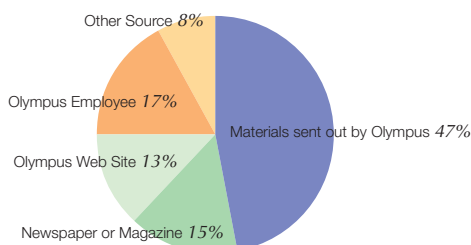
Feedback from Readers about the Olympus Environmental Report 2002

A number of inquiries and comments were made about the Olympus Environmental Report in FY2003. We have reviewed and summarized reader opinions below, and they are reflected in this issue.

Q1 What do you think of the Olympus Environmental Report 2002 after reading it?



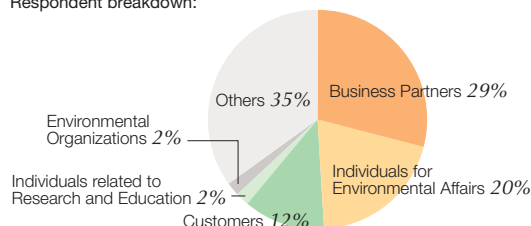
Q3 How did you come to know about this report?



Results of Questionnaires about Olympus Environmental Report 2002

Number of respondents: 51 As of March 31, 2003

Respondent breakdown:



Q2 Please note which parts of the report were of particular interest to you?

Items	Number responses	Items	Number responses
Message from the President	9	Product Packaging and Distribution	17
Business Activities and Environmental Impact	15	Energy and Resources Management	20
Highlights of Environmental Activities in FY 2001	9	Waste Management and Recycling	25
Management Philosophy and Environmental Principles	10	Chemicals Management	12
Environmental Organization	6	Prevention of Air and Water Pollution	11
Mid-term Environmental Plan	13	Social Contribution	4
Environmental Management System	13	Environmental Communication	10
Risk Management	19	Overview of Facilities in Japan	1
Education	13	FY 2001 Domestic Data	3
Health and Safety	9	Overseas Production Bases	4
Environmental Accounting	12	Environmental Activities and Awards	5
Environmental-Conscious Product	14		
Examples of Environmental-Conscious products	23		

* The total number of answers does not agree with the number respondents because of multiple answers.

Opinions on Olympus Environmental Report 2002

Points to be improved	Reflection on Olympus Environmental Report 2003	Related pages
Want more cases of practical application.	→ More cases of branches including overseas branches are inserted.	pp.24-29,36,37
How about posting opinions and valuation of employees and customers?	→ Photographs and comments of employees are included.	pp.9,21
Expect articles to appear written based on products near at users' hand, products rating environmental consciousness.	→ Articles on μ10 DIGITAL is inserted in the page of the environment-considered	pp.20
It would be better to insert a description of issues to address in the future and activities planned in 2003.	→ Some appear in the Environment Basic Plan.	pp.6
Want more comparisons with legal standards and general values.	→ Some are included in business data at facilities similar to 2002.	pp.34,35
Isn't it better to include failures as well as successes?	→ An article about heavy oil spillage was posted in 2002. Although adequate matters are not available in this issue, risk management is emphasized in soil investigation.	pp.10,11
Expand description of information about social contributions.	→ The space for articles about social contribution is doubled.	pp.30,31
Few diagrams are inserted.	→ Diagrams are increased compared to the 2002 edition.	-
Show both cost and effect for each item of environmental accounting. I could did not figure out what cost was paid and what effect was attained brought.	→ We could not incorporate this request in the report in this issue. We plan will try again to incorporate it in future environmental accounting.	pp.15

Good Points	
<ul style="list-style-type: none"> Pages and information increased in comparison with the previous issue; easier to understand Photographs and diagrams are used, aiding easier visual comprehension. "Olympus and the Environment" was excellently organized. Information on both positive and negative cases is disclosed. "Summary 2001" in environmental accounting is easy to understand. The Olympus Environmental Principles and other corporate information was helpful reference material. 	<ul style="list-style-type: none"> I felt top management's policy is satisfactorily reaching the lower levels in the hierarchy. I was moved by the words "Activities with nature" appearing in the environmental Philosophy. Risk management is included (rarely appears in other companies' reports). It was good to learn about trends in lead-free optical glass. It is wonderful that Olympus and affiliates in Japan are united and committed to solving environment problems.

Environmental Data of Domestic and Overseas Facilities



Name and Location of Workplaces	Overview	Water					Air				Water Quality	
		Use of water (m ³)	Boilers	Soot and dust (g/m ³ N)	NOx (cm ³ /m ³ N)	SOx (m ³ /h)	pH	BOD (mg/l)				
									Piped water	Ground water	Total	
Olympus Optical Co., Ltd.	Technology Research Institute (Hachioji) 2951 Ishikawa-cho Hachioji-shi, Tokyo 192-8507 Phone: +81-426-42-2111 (direct)	Year of foundation: 1963 Zoning: Semi-industrial zone Land area: 89,552 m ² Gross floor area: 70,767 m ² Business area: Development of medical services, image, industry-related and other matters, development of components, production technology	Piped water	30,213	3	0.01 (0.3)	72 (100)	0.04 (3.62)	7.6 (5-9)	120 (600)		
	Ground water	81,971										
	Total	112,184										
	Hinode Plant 34-3 Hirai Hinode-cho Nishitama-gun, Tokyo 190-0182 Phone: +81-42-597-7111 (direct)	Year of foundation: 1993 Zoning: Industrial zone Land area: 8,486 m ² Gross floor area: 10,606 m ² Business area: Production of medical services and industrial endoscopes and ultrasonic products	Piped water	9,516	0	8.1 (5-9)	280 (600)					
Ground water	0											
Total	9,516											
Ina Plant 5128 Oaza-Ina Ina-shi, Nagano 396-0021 Phone: +81-265-72-1111 (direct)	Year of foundation: 1944 Zoning: Semi-industrial zone Land area: 38,863 m ² Gross floor area: 38,677 m ² Business area: Optics microscope production	Piped water	10,576	7	0.005 (0.3)	115 (180)	0.06 (0.1)	8.3 (5.8-8.6)	17 (30)			
Ground water	340,492											
Total	351,068											
Tatsuno Plant 6666 Inatomi Tatsuno-machi Kamiina-gun, Nagano 399-0495 Phone: +81-226-41-4111 (direct) * Including Okaya Olympus Co., Ltd.	Year of foundation: 1981 Zoning: Industrial zone Land area: 125,840 m ² Gross floor area: 44,000 m ² Business area: Digital camera/liquid crystal inspection unit production, semiconductor research and development	Piped water	10,901	15	0.01 (0.3)	95 (180)	0.1 (2.4)	7.4 (5.8-8.6)	15 (30)			
Ground water	580,120											
Total	591,021											
Manufacturing Affiliates in Japan	Tokyo Kinzoku Co., Ltd., Kyowa Plant 7001-1 Oaza-Koguri-Kaminakadai Kyowa-cho Makabe-gun, Ibaraki 309-1101 Phone: +81-296-57-3555 (direct)	Year of foundation: 1970 Zoning: Non-zoning district Land area: 18,624 m ² Gross floor area: 6,304 m ² Business area: Aluminum die-casting, plastics molding, and assembly of microscopes etc.	Piped water	3,302	8.0 (5.8-8.6)	20 (25)						
	Ground water	6,252										
	Total	9,554										
	Olympus Co., Ltd., Aomori Plant 2-248-1 Okonogi Kuroishi-shi, Aomori 036-0357 Phone: +81-172-52-8511 (direct)	Year of foundation: 1973 Zoning: Industrial zone Land area: 26,345 m ² Gross floor area: 8,967 m ² Business area: Production of medical services processing apparatuses	Piped water	10,930	2	0.003 (0.3)	88 (17.5)	4.3 (17.5)	7.5 (5.8-8.6)	9.5 (160)		
	Ground water	5,072										
	Total	16,002										
	Olympus Co., Ltd., Aizu Plant 500 Aza-Muranishi Ozaza-Iidera Monden-cho Aizu-Wakamatsu-shi, Fukushima 965-8520 phone: +81-242-28-2111 (direct)	Year of foundation: 1970 Zoning: Industrial zone Land area: 63,657 m ² Gross floor area: 27,975 m ² Business area: Production of medical services endoscopes	Piped water	0	12	0.095 (0.3)	120 (260)	0.04 (1.05)	7.3 (5.8-8.6)	17 (160)		
	Ground water	250,376										
	Total	250,376										
	OOT Co., Ltd., Head Office 3-15-1 Shibamiya Nagachi Okaya-shi, Nagano 394-0083 Phone: +81-266-27-6111 (direct)	Year of foundation: 2002 Zoning: Class 2 semi-industrial zone Land area: 19,967 m ² Gross floor area: 14,183 m ² Business area: Technology development and manufacture of digital cameras and optics equipment products	Piped water	3,325	3	0.02 (0.15)	110 (120)	ND (1.2)	7.4 (5.8-8.6)	ND (30)		
Ground water	72,795											
Total	76,120											
OOT Co., Ltd., Oomachi Branch 3798 Higashihara Aza Oaza-Tokwa Oomachi-shi, Nagano 398-0004 Phone: +81-261-22-6111 (direct)	Year of foundation: 1974 Zoning: Industrial zone Land area: 17,810 m ² Gross floor area: 7,116 m ² Business area: Design and fabrication of metal mold, MO molding, parts assembly and production	Piped water	0	7.1 (5.8-8.6)	8.9 (160)							
Ground water	22,633											
Total	22,633											
OOT Co., Ltd. Sakaki Branch 1355 Nakanogji Sakaki-machi Hanishina-gun, Nagano 389-0602 Phone: +81-268-82-2361 (direct)	Year of foundation: 1978 Zoning: Industrial zone Land area: 41,415 m ² Gross floor area: 15,475 m ² Business area: Production of camera lenses and printers	Piped water	60,824	1	ND (0.3)	89 (180)	ND (2)	7.9 (5.8-8.6)	16 (30)			
Ground water	36,492											
Total	97,316											
Mishima Olympus Co., Ltd. 128 Shimodogari Nagaizumi-machi Sunto-gun, Shizuoka 411-0943 Phone: +81-559-73-1311 (direct)	Year of foundation: 1978 Zoning: Semi-industrial zone Land area: 7,066 m ² Gross floor area: 5,931 m ² Business area: Development, manufacture and service of blood analyzing unit	Piped water	19,382	7.6 (6-8.6)	8.0 (8)							
Ground water	0											
Total	19,382											
Shirakawa Olympus Co., Ltd. 3-1 Aza-Okamiyama Oaza-Odakura Nishigo-mura Nishi-Shirakawa-gun, Fukushima 961-8061 Phone: +81-248-27-2211 (direct)	Year of foundation: 1979 Zoning: Industrial zone Land area: 76,550 m ² Gross floor area: 11,500 m ² Business area: Production of medical services mechanical appliances	Piped water	8,944	3	ND (0.3)	65 (180)	0.44 (17.5)	7.0 (5.8-8.6)	3.2 (25)			
Ground water	5,479											
Total	14,423											
Overseas Affiliated Production Companies	Olympus (Shenzhen) Industrial Ltd. Nantou, 5th Industrial District, Nanshan, Shenzhen, Guang Pong, P.R.C Phone: +86-755-698-0118	Year of foundation: 1991 Zoning: Industrial zone Land area: 104,446 m ² Gross floor area: 33,334 m ² Business area: Mainly camera assembly, lens processing, plastics molding, metal component processing	Piped water	244,453	2	0.08 (0.08)	1.5 (-)	ND (0.7)	7.5 (6-9)			
	Ground water	0										
	Total	244,453										
	Olympus Winter & Ibe GmbH Kuehnstraße 61, D-22045 Hamburg, Germany Phone +49-40-669660	Year of foundation: 1954 Land area: 13,300 m ² Gross floor area: 11,980 m ² Business area: Development, production, marketing and service of endoscope products	Piped water	5,322	5,322							
Ground water	0											
Total	5,322											
Olympus Diagnostica GmbH (Irish Branch) O'Callaghan's Mills, Co. Clare Lismoehan, Ireland Phone: +353-656-831100	Year of foundation: 1987 Land area: 1,300,000 m ² Gross floor area: 5,700 m ² Business area: Development and production of blood analyzer reagent	Piped water	14,935	14,935								
Ground water	0											
Total	14,935											
KeyMed (Medical & Industrial Equipment) Ltd KeyMed House, Stock Road, Southend-on-Sea, Essex SS2 5HQ, UK Phone: +44-0-1702-616333	Year of foundation: 1970 Land area: 30,000 m ² Gross floor area: 15,000 m ² Business area: Marketing, repair and development and production of endoscope products	Piped water	15,739	15,739								
Ground water	0											
Total	15,739											

Parenthesized values in bottom layer are regulatory values.



(As of March 31, 2003)

Track Record Data																						
Water Quality				Energy							Waste					Amount of PTRT-specified Chemicals handled						
COD (mg/l)	SS (mg/l)	n-H (mg/l)	Bacillus (number/m ³)	Power (10,000 kWh)	Heavy fuel oil (kl)	City gas (1,000 m ³)	LPG (1,000 m ³)	Gasoline (kl)	Others (kl)	CO ₂ conversion basis (t-CO ₂)	General waste (tons)	Industrial waste (tons)	Specialized waste (tons)	Amount of recycling (tons)	Rate of recycling (%)	Trichloroethylene (tons)	Lead compounds (tons)	Xylene (tons)	Toluene (tons)	Ethylene oxide (tons)	Dichloromethane (tons)	Others (tons)
	2 (600)			1,842	153	680		3	60	8,624	38.2	149.0	10.7	570.0	74.2			0.01	0.03	0.10		0.13
	250 (600)			217			25			930	10.7	0.0	0.7	51.5	81.9		0.01			0.44		0.12
	2 (50)	- (30)	140 (3,000)	*1,146	938		5	18	203	7,272	9.7	31.1	16.0	395.4	87.4	0.47	0.28	0.04	0.08		0.07	1.50
5.8 (20)	4 (30)	0.5 (30)	0 (3,000)	2,075	1,012		8	8	8	10,298	23.0	23.6	66.6	577.5	83.6		1.30	0.07	0.07			2.21
	27 (40)	2.0 (3)	2,000 (3,000)	499	543		33	6	4	3,515	63.1	32.1	0.0	236.7	71.3							
5.7 (160)	6 (200)	2.4 (30)		286	135		3	1	12	1,447	7.4	0.0	0.0	53.0	87.7		0.01		0.15	2.81		0.02
	6 (200)	ND (30)	980 (3,000)	*1,251	865		11	4	6	6,952	31.4	31.0	13.0	235.6	75.8		3.27	3.44	4.95		0.06	2.62
ND (30)	ND (50)	2.1 (30)	- (3,000)	208	176		1	2	11	1268	3.5	2.3	0.0	37.6	86.6		0.26					
	6 (200)	1.0 (5)	ND (3,000)	1,041			37	2	17	3,991	0.0	149.3	0.0	128.5	46.3		0.02	0.56	5.12		0.06	0.04
	27 (30)	- (30)	29 (3,000)	638	73		2	4	19	2,550	29.3	40.3	17.4	136.7	61.1			0.12	0.16		0.16	0.07
	9 (100)			110				3		400	9.4	27.6	0.0	46.1	55.5							
	10 (70)	0.5 (10)		327	46		5	4	1	1,334	7.5	4.3	0.1	161.1	93.1		0.71			0.30		
71 (130)	31 (100)			1,496			51	2	3,931	16,042	8.3	42.8	71.6	492.9	80.1							
				241		2,303				1,834	316.0	16.1	35.1	343.0	49.4							
				190	72					1,328	84.5		220.1	55.7	15.5							
				301		4,799				2,208	3.8	5.8	1.0	346.4	97.0							

Fields left blank are not applicable. A hyphen means no measurement. ND means below the detection limit. Asterisk numbers are totals for plants (Aizu, Opno, Kita-Aizu) (Ina, Miyata)

CO₂ conversion for the Shenzhen plant is calculated with the same factor as in Japan.

Overseas Production Bases

Address to environmental affairs is adjusted to the characteristics of each district in overseas production bases.



Olympus (Shenzhen) Industrial Ltd.

Location: China
 Shenzhen, Guandong, China
 Number of Employees: 5,800
 Main Business: Assembly of Film Camera and Digital Camera, and Lens processing, Plastics Molding
 ISO 14001 certification: Obtained in September 1999

After a wide range of Environmental Protection Activities such as Energy Saving, Public Nuisance Prevention, and Waste Reduction, the Shenzhen Plant was highly evaluated in reexamination for ISO 14001 certification in September 2002. The company was appointed a candidate for clean production corporations by Guandong province in April 2002, and certified as the Green Corporation of FY2003 by Shenzhen City in February 2003.

For energy saving, we renovated illumination in the molding workplace and changed ventilation in the painting workplace to an inverter system. In Public Nuisance Prevention, we automated the filter press of the drain treatment system to improve processing efficiency, and also expanded the volume of the aerobic tank, anaerobic and adjustment tanks to raise processing capacity.

To reduce waste, we expanded the scope of components applicable to recycling scraps produced in the plastics molding process, and as a result, enabled an annual 118 tons of materials to be regenerated and reused.



Di Bao Feng (at right in photograph) and Ms Luo Ying
 Environment safety section, Personnel/general affairs department



Olympus (Shenzhen) Industrial Ltd.



Testimonial of Green Corporation



Waste Resin Regeneration Facility



Renovation of Public Nuisance Treatment Facilities

Olympus Winter & Ibe GmbH: Abbreviation OWI

Location: Kuehnstraße, Hamburg, Germany
 Number of Employees: Approximately 500
 Main Business: Development, Production, Sales, and Service of Rigid and Flexible Endoscopes.
 ISO14001 Certification: Obtained May 2001

During FY2003 OWI modified the existing gas-heating installation as an environmental project. In this context 3 units have been equipped with so called "Ceramic-Nozzles" in order to optimize the burning. The idea behind this is that the Ceramic-Nozzle, which is additionally mounted in the burning chamber, will lead to an optimized burning of the gas and improved heat transmission. Additionally, a part of the exhaust gas will be guided again into the burning flame (re-circulation).

From this modification the following environmental related improvements arise:

- Lower Gas Consumption (approx. 15%)
- Lowering of Pollutant-Emission
- Reduced Smoke Build-up
- Reduced CO₂ Emission



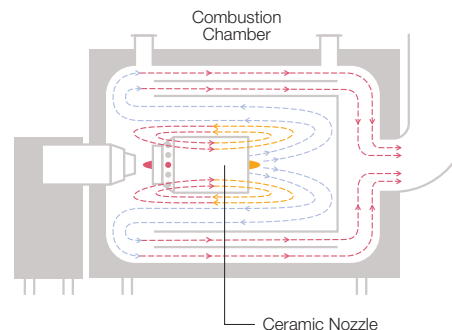
Mr. Bruno Soltau,
 Head of Regulatory Affairs



OWI



Gas-Heating



■ Diagram of Combustion Chamber



Olympus Diagnostica GmbH (Irish Branch): Abbreviation ODI

Location: O' Callaghan's Mills, County Clare, the Republic of Ireland
Number of employees: Approximately 220
Main Business: Development and manufacturing of reagents for clinical blood analyzers
ISO14001 Certification: This company expects to obtain the certification in 2003

ODI has a 300 acre site which boasts forests, wildlife, and three lakes. ODI's effluent is directed into one of the three lakes on the Olympus property where our effluent quality has no impact on the environment. It is worth noting that this lake is an important lake in the local community for fishing.



Human Resource Manager, Mr. Liam McGregor



ODI

During FY2003, ODI upgraded its effluent Treatment Plant for improving the quality of effluent discharge and increased capacity and control of the effluent treatment process.

One of the key elements is the introduction of wetlands polishing beds to further purify final effluent. Since the introduction of the wetlands immediate improvements were evident for parameters such as Phosphate, Ammonia, BOD and Suspended Solids levels. For instance, before the introduction in the Wetland Polishing beds, the data of phosphate was 0.368 mg/L (License limit is 1.0mg/L), after the introduction, the data changed to 0.038mg/L.

The other key element is an introduction of vermiculture units to treat and dispose of sludge. This involves releasing a controlled amount of sludge, which is a by-product of ODI's effluent treatment plant, into a sludge digester which contains worms. The worms with the aid of physical, microbiological and chemical actions change the organic matter into "Vermicompost". ODI is one of the first companies to install this technology for industrial waste treatment in Ireland.



Reed Bed Polishing Ponds



Vermiculture Unit

KeyMed (Medical & Industrial Equipment) Limited:Abbreviation KMD

Location: Stock Road, Southend-on-sea, United Kingdom
Number of employees: Approximately 650
Main Business: Sale, repair, development and production of endoscopes.
ISO 14001 Certification: Obtained March 2002

Since obtaining ISO 14001 certification in March 2002, KeyMed has continued to develop the Environmental Awareness of its staff, and has introduced a number of measures to further reduce its environmental impact and enhance its contribution to the local community. Most significant of these is the 'Green Travel Plan'. KeyMed is a founding contributor and enthusiastic supporter of this initiative from the local authority.



Regulatory & Environmental Affairs Manager, Mr. Andrew J Vaughan



KeyMed

The Green Travel Plan is aimed at encouraging local companies to reduce the environmental impact of their staff traveling to and from work. It promotes such aspects as cycling, car sharing, use of public transport and walking. KeyMed has established a car share database, has negotiated discounts for its staff with local public transport providers and has extended its existing changing and showering facilities. KeyMed is also proposing to fund the construction of a cycle path running adjacent to the company's site, to provide safe access to the company's premises for cyclists approaching from the north.



Shower Room



Bicycle-parking Space



Changing Room

Olympus Environmental Activities and Awards/Editor's note

History

Year	Month	Major activities
1975	March	Pollution Prevention Committee established
1976	June	Each facility celebrated Environment Week Production of calendars, etc., in support of the WWF (current World Wild life Fund) begun
1970s	Latter half	Companywide regulations and standards related to pollution prevention, waste treatment, chemicals management, etc. arranged and upgraded
1984	April	Pollution prevention diagnosis program begun (continued though 1996)
1992	January	Environmental Affairs Office responsible for Companywide coordination of environmental activities established
	August	Olympus Environmental Principles created
1993	July	Completed discontinuation of use of specified chlorofluorocarbons and 1,1,1-trichloroethane
1994	December	Completed discontinuation of use of polystyrene foam for compact camera packaging
1996	March	Companywide 96 environment Basic Plan instituted
	June	Companywide environmental management manual created
1997	February	Ina Plant became first Olympus facility to obtain ISO 14001 certification.
1998	June	PRTR data for fiscal 1997 gathered and announced
1999	July	Companywide 99 Environment Basic Plan instituted
	September	Shenzhen Plant (Shenzhen, China) obtained ISO 14001 certification
2000	February	Hinode Plant received award for superior rationalization of energy use from the Kanto Electricity Use Rationalization Committee
	March	Technology Research Institute obtained ISO 14001 certification, completing the certification of all 12 Olympus development and manufacturing facilities in Japan
	October	Introduced Green Procurement Guidelines, finished audit of parts suppliers Drafted guidelines for the purchase of products for commercial use
2001	February	Hinode Plant again received award for superior rationalization of energy use from the Kanto Electricity Use Rationalization Committee
	March	Introduced technology to eliminate trichloroethylene in the washing process Garbage processing device introduced at Tatsuno Plant
	May	Olympus Winter & Ibe GmbH obtained ISO 14001 certification
	June	Garbage fermentation processing device introduced at Technology Research Institute
	August	Olympus Logitex Co., Ltd., Tokyo Center started operation of distribution bases
2002	March	Medical & Industrial Equipment (KeyMed) Limited obtained ISO 14001 certification Recycling center of Technology Research Institute (Hachioji) started Company-wide 02 Environment Basic Plan designated Ecology Vision 21 established
	April	Environmental Development Department established Environment Committee organization arranged (Company-wide Environment committee, plant responsible officers meeting, etc.) Environment site assessment started around soil and ground water examination at domestic production sites
	September	Internal Eco-forum held
2003	February	Ina Plant awarded Prize of Director-General of Agency of Natural Resources and Energy
	March	Trichloroethylene totally eliminated

Editor's note

Since FY2003 was the first year of The 02 Environment Basic Plan, we focused on development of measures for eco-products, eco-facilities, and eco-management, the priority measures of Ecology Vision 21. As the editor of this report, I retraced Olympus' environmental protection activities in the year, referencing the Environment Report Guideline (FY2001 edition). I requested that the members of the environmental affairs, including overseas employees, deliver reports. Environmental challenges from society have become increasingly substantial and important. This requires a combination of a down-to-earth approach and fresh wisdom. I hope readers find the concepts and activities of the Olympus group informative and interesting. I also hope that you will share your candid comments, advice, and criticism with us.



Katsuhiko Tsunefuji
General Manager,
Environmental Development Department

Olympus Group's Main Operating Bases

(As of April 1, 2003)

Japan

Olympus Optical Co., Ltd.

- Head Office
- Technology Research Institute (Hachioji)
- Hinode Plant
- Ina Plant
- Tatsuno Plant
- Olympus General Service Co., Ltd.
- Olympus Co., Ltd., Aomori Plant
- Olympus Co., Ltd., Aizu Plant
- Olympus Opto-technology Co., Ltd., Head Office
- Olympus Opto-technology Co., Ltd., Ojmachi Branch
- Olympus Opto-technology Co., Ltd., Sakaki Branch
- Olympus Opto-technology Co., Ltd., Tatsuno Branch
- Olympus Opto-technology Co., Ltd., Hachioji Branch
- Mishima Olympus Co., Ltd.
- Shirakawa Olympus Co., Ltd.
- Okaya Olympus Co., Ltd.
- Olympus Engineering Co., Ltd.
- Olympus Systems Co., Ltd.
- Novus Gene Inc.
- Olympus AVS Co., Ltd.
- Olympus Medical Engineering Co., Ltd.
- Olympus Lease Co. Ltd.
- KS Olympus Co., Ltd.
- Optonetech Co., Ltd.
- AOI technology Co., Ltd.
- ITX Co., Ltd.

Asia and Pacific

- Olympus Asian Pacific Limited
- Olympus Asset Management Limited
- Olympus Hong Kong and China Limited
- Pan Yu Factory
- Olympus (Shenzhen) Industrial Ltd.
- Beijing Beizhao Olympus Optical Co., Ltd.
- Olympus (China) Investment Co., Ltd.
- Olympus Beijing Industry & Technology Limited
- Olympus Taiwan Co., Ltd.
- Olympus Singapore Pte Ltd
- Olympus Australia Pty Ltd
- Olympus New Zealand Limited
- Olympus Trading (Shanghai) Limited
- Olympus (Thailand) Co., Ltd.
- Olympus Technologies Singapore Pte Ltd
- Olympus Korea Co., Ltd.
- Olympus (Malaysia) Sdn. Bhd
- Olympus (India) Pvt. Ltd.
- Olympus Optical Technology Philippines, Inc.

Europe

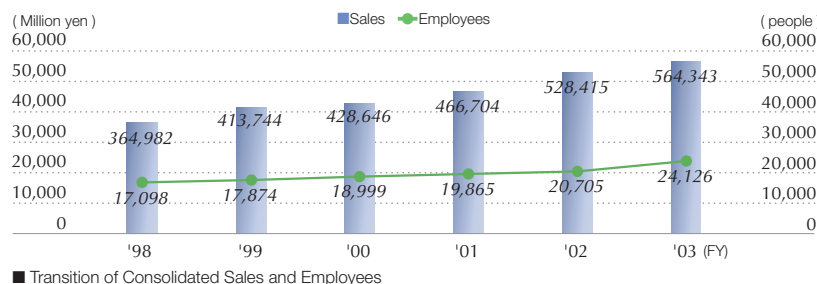
- Olympus Optical Co. (Europa) GmbH
- Olympus Winter & Ibe GmbH
- Olympus Optical AB
- Olympus France S.A
- Olympus Austria Gesellschaft m.b.H
- Olympus Optica (Schweiz) AG
- Olympus d.o.o za trgovinu
- Olympus trgovina d.o.o.
- Olympus C&S, Spol. s.r.o.
- Olympus Diagnostica GmbH
- Olympus Diagnostica GmbH (rish Branch)
- Olympus Danmark A/S
- Olympus Norge A/S
- Olympus Italia S.R.L.
- Olympus Software Europe GmbH
- Olympus Endo-Repair Europe GmbH
- Olympus Hungary Kft.
- Olympus Medical Care (Hungary) Kft Medical Service Limited
- Olympus Endoterapia Sp.z.o.o.
- Olympus Optical Polska Sp.z.o.o.
- Olympus Optical Co Espana, S.A.
- Olympus Technicas, S.L.
- Olympus Finland OY
- Olympus Slovenija d.o.o.
- Olympus Nederland. B.V.
- Olympus U.K. Ltd.
- Olympus Optical Co. (U.K.) Ltd.
- Olympus KeyMed Group limited
- KeyMed (Medical & Industrial Equipment) Limited
- KeyMed (Ireland) Ltd.
- Algram Group Ltd.
- Olympus Moscow Limited Liability Company
- Olympus BioSystems GmbH
- Olympus Service Facility Portugal Lda.
- Olympus Optical Portugal S.A
- Olympus Diagnostica Portugal S.A.
- Olympus d.o.o.

Development
Manufacturing
Marketing
Service
Repair Plant
Leasing
Operational Support
Distribution
Business Incubation
Holding Company
Financial Company

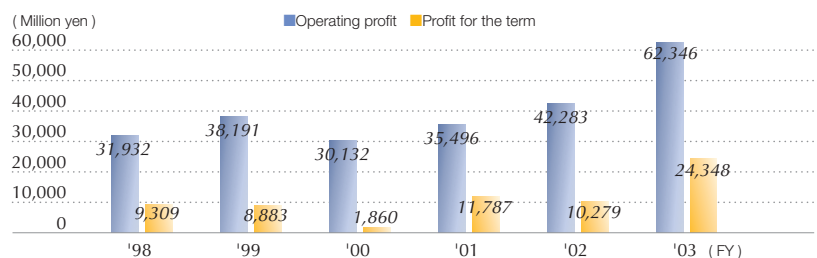
America

- Olympus USA Incorporated
- Olympus America Inc.
- San Jose National Service Center
- Olympus Latin America, Inc
- Olympus Optical do Brasil, Ltda.
- Olympus America de Mexico, S.A. de C.V.
- Olympus Receivable Funding Corporation I
- Olympus Receivable Funding Corporation II
- Olympus Corporation of America
- Olympus Industrial America, Inc.
- Olympus Integrated Technologies America Inc.

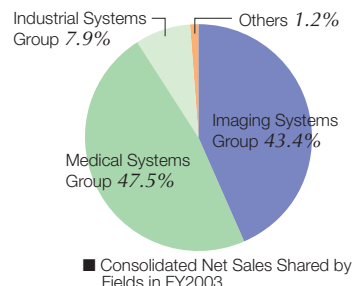
Business Profile of Olympus Group



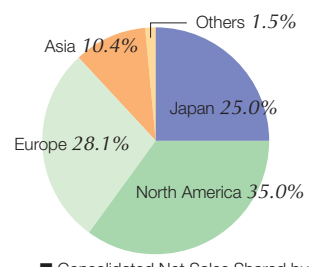
Transition of Consolidated Sales and Employees



Operating Profit and Profit for the Term



Consolidated Net Sales Shared by Fields in FY2003



Consolidated Net Sales Shared by Regions in FY2003



Smile for the Earth

OLYMPUS[®]

Olympus Optical Co., Ltd.

**For enquiries, please contact:
Environmental Promotion Department**

2-3 Kuboyama-cho Hachioji-shi, Tokyo 192-8512 Japan

TEL: +81-426-91-7288

FAX: +81-426-91-7291

E-mail: environ@ot.olympus.co.jp

The Olympus Web Site

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

TREE FREE



This report is printed with soybean oil ink via waterless printing on non-wood Take-pulp key G A paper made from 100% bamboo pulp.

Published in August 2003

Next issue: August 2004

X04KE-0803T[Ⓘ] Printed in Japan