



# UBE Group CSR Report 2008

Wings of technology, Spirit of innovation



Responsible Care®

**Ube Industries, Ltd.**

## Corporate Philosophy

The history of Ube Industries, Ltd. and its affiliated companies (the UBE Group) starts with Okinoyama Coal Mine, established about 110 years ago to develop coal fields in Ube, Yamaguchi Prefecture. With its commitment to “living and prospering together with the local community,” the Company used the limited coal resource as a starting point to create an industry with infinite possibilities, developing a succession of new businesses needed by the times to bring long-lasting prosperity. Unremitting self reform, a desire to progress through original technologies, and the ideal of sharing with all stakeholders throughout our long history—these elements make up the UBE Group’s core identify.

## Progress of the Medium-Term Management Plan

Entering the 21st century, the UBE Group created its Group vision for the new century—“Wings of technology, Spirit of innovation. Our DNA driving our global success.” Based on this vision, we have already clearly established our long-term direction, which is to further develop our Group focusing on our differentiated chemicals business. In the current three-year medium-term management plan, Stage Up 2009, which we launched in fiscal 2007, we set forth the following basic policies: **(1) establishment of a platform for profitability that ensures sustainable growth; (2) sustained improvement of financial position; and (3) strengthening of CSR activities.** Based on these policies, we also set the numerical targets to be achieved by fiscal 2009, the final year of the plan, as well as the targets to be achieved over five years, by fiscal 2011, with the aim of further boosting our profitability.

In the first year of Stage Up 2009 we achieved favorable business results, improving both our profitability and financial position, as shown in the table below. We are thus steadily moving toward the achievement of our predefined targets. We will continue to use the strength of the UBE Group, which has a wide spectrum of products, including globally recognized products, products with large shares in the niche markets and new products with high growth potential, to achieve stable management that does not depend on one particular business factor.

We also strengthened our CSR promotion system by newly establishing the Group CSR Committee as one of the committees placed under the Group Strategic Management Committee.

The UBE Group is committed to steadily increasing its corporate value on a long-term basis and fulfilling its responsibilities to all its stakeholders, in order to gain even more trust from them.

### Progress of the Medium-Term Management Plan, Stage Up 2009

Item	Results for FY2006 (Reference)	Results for FY2007	Interim targets for FY2009	Targets for FY2011
Net debt/equity ratio*1 (times)	1.7	1.4	Less than 1.3	Less than 1.0
Equity ratio (%)	24.1	26.9	30 or more	—
Operating income ratio (%)	7.1	7.9	7.5 or more	8.5 or more
Return on assets (ROA)*2 (%)	7.0	8.2	7.5 or more	8.5 or more
Return on equity (ROE) (%)	13.7	13.1	12 or more	—
Net sales	¥655.6 billion	¥704.2 billion	¥700 billion or more	—
Operating income	¥46.8 billion	¥55.9 billion	¥53 billion or more	¥65 billion or more
Net debt	¥298.7 billion	¥275.6 billion	Under ¥279 billion	—
Equity capital*3	¥172.5 billion	¥193.8 billion	¥218 billion or more	—

\*1 Net debt/equity ratio: Net interest-bearing debt (interest-bearing debt – cash and cash equivalents)/Equity capital

\*2 Return on assets: (Operating income + interest and dividend income + investment profit and loss by equity method)/Total assets

\*3 Equity capital: Net assets – minority interests – share subscription rights

## Editorial Policy

We began publishing our annual RC Report in 1997 to introduce our environmental initiatives. We subsequently changed the name of the report to CSR Report. This year, 11 years after the very first publication of the report, we have created *UBE Group CSR Report 2008* as our fourth CSR report. In editing this annual report, we have been committed to ensuring its accuracy and intelligibility. The 2008 edition has the following features:

- Inclusion of a new section titled "With Stakeholders"  
We structured the section in an easy-to-understand manner that uses intelligible expressions to make it satisfactory to all our stakeholders.
- Change to the manner of communicating the "Message from the President"  
To help readers understand top management's ideas more easily, we invited Mr. Kazuma Yamane, an expert on manufacturing and environmental problems, to have an interview with the president of UBE Industries, Ltd.
- Inclusion of more opinions from third parties  
To clearly show how the people outside the UBE Group view the Group and to identify new CSR-related problems for the Group, we included more opinions from third parties in the report, in the form of an interview with the president, third-party verification, and expert opinion.

This report was created mainly by the editing members comprising the staff of the Environment & Safety Department, which is in charge of Responsible Care (RC) activities, CSR Promotion Secretariat, and CSR Department. We will implement more measures for the "strengthening of CSR activities" to meet the expectations of the majority of our stakeholders while continuing to report the UBE Group's CSR activities in an appropriate manner.

## Scope of This Report

### Period covered:

Fiscal 2007 (from April 1, 2007 to March 31, 2008)

(The report, however, does at times refer to activities conducted in fiscal 2008 and future plans.)

### Companies covered:

- The UBE Group (150 companies)
  - Of which, the following companies are covered in the reporting of major financial data (on page 9):
    - Ube Industries, Ltd. and its consolidated companies (95)
      - Consolidated subsidiaries: 67
      - Equity method affiliates: 28
    - Of which, the following companies are covered in the reporting of environmental performance data:
      - Ube Industries, Ltd.
        - Four chemical factories (Chiba, Sakai, Ube, and Nishioki)
        - Three cement factories (Ube, Isa, and Kanda)
        - Ube Aluminum Wheel Factory
      - Other Group companies (11)
        - Ube Film, Ltd.
        - Meiwa Plastic Industries, Ltd.
        - Ube Ammonia Industry, Ltd.
        - Ube Agri-Materials, Ltd.
        - Ems-Ube, Ltd.
        - UBE-MC Hydrogen Peroxide, Ltd. (former Kemira-Ube, Ltd.)
        - Ube-Nitto Kasei Co., Ltd.
        - Ube Material Industries, Ltd.
        - Ube Board Co., Ltd.
        - Ube Machinery Corporation, Ltd.
        - Ube Steel Co., Ltd.
  - Definitions
    - UBE: refers to Ube Industries, Ltd. (unconsolidated)
    - The UBE Group: refers to the UBE Group companies, including Ube Industries, Ltd.

### Areas covered:

This report describes the UBE Group's activities in Japan and some locations overseas (Thailand, Spain and Canada).

### Statistical data published in this report:

- All statistical data and relevant descriptions published in this report, excluding the environmental performance data, cover all Group companies.
- In principle, data is for the last five years (2003 to 2007).
- The scope of data, however, does vary in places. In such cases, the specific scope is noted on the relevant page.

### Reference guidelines:

This report was created in line with the Japanese Ministry of the Environment's Environmental Reporting Guidelines Fiscal Year 2007 Version. We also referred to the Ministry's Environmental Performance Indicators Guidelines for Organizations (Fiscal Year 2002 Version) for environmental performance data and to the Ministry's Environmental Accounting Guidelines 2005 for environmental accounting standards.

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### Front Cover Image

The photo on the front cover was taken off the coast of Thailand, where the UBE Group has a production base. We have long been committed to protecting the environment and being aware of the importance of the environment, even before society began to become more environmentally aware. In order to protect the blue sky and the sparkling sea for future generations, we will continue to develop environment-friendly products and technologies.

### Back Cover Image

The UBE DOG on the back cover was created in March 1997 as a character for the UBE Group's TV commercials. This character is made using Ube Industries' leading-edge technology and materials to highlight its corporate image as a company engaged in a range of businesses.

# UBE Group's Commitment to Society and Global Environmental Preservation

President & Representative Director  
Ube Industries, Ltd.

Hiroaki Tamura



Nonfiction Writer

Kazuma Yamane

As a means to obtain external verification of the UBE Group's social contribution activities, we invited Mr. Yamane, a nonfiction writer, to interview the president.

## To Become a Robust "Global Niche Company"

**Yamane:** Today I made study visits to your vast plant facilities and the newly opened UBE i Plaza comprehensive information center. These visits have made me recognize that UBE is engaged in a wide range of business operations. Stakeholders who have an interest in UBE might want to know, more than anything else, about UBE's future plans and potentials, and what its president passionately wants to do. Today I will ask you questions focusing on these matters. To begin with, how many product items does the UBE Group manufacture?

**Tamura:** The UBE Group initially started its business in the coal industry in 1897 and thus has a history of more than 110 years. We now provide diversified products in the aerospace, automobile, information electronics, social infrastructure, and lifestyle product fields. Although I have never counted them one-by-one, I believe we are manufacturing at least 500 product items.

**Yamane:** That's great! Do you have "only one in the world" or "Japan's No. 1" products among them?

**Tamura:** Our "only one in the world" products include Heliofresh, used as material for perfumes; dimethyl oxalate (DMO), used in etching agent for electronic materials; and high purity catechol,

used in resist stripping agent for semiconductors. We have a number of "only one in the world" and "Japan's No. 1" products, particularly in the fine chemicals field. We are the top manufacturer of ammonia and synthetic rubber (butadiene rubber) in Japan. In caprolactam and nylon 6 production, we rank among the top three manufacturers in the world and are No. 1 in Japan. We are also ranked No. 1 in the world for electrolyte for lithium ion secondary batteries, and No. 2 in the world for large die-casting machines. As for cement, which we have long been manufacturing, we are No. 4 in Japan in terms of production volume and No. 2 in terms of sales volume (in our joint venture with Mitsubishi Materials Corporation). Moreover, our Okinoyama Coal Center is No. 1 in Japan in terms of the quantity of coal that can be stored.

**Yamane:** I hear that the ammonium sulfate used as material for fertilizers is in high demand throughout the world.

**Tamura:** Yes, that's true. We are manufacturing ammonium sulfate as a byproduct of caprolactam, which is used as material for nylon fibers and resin. We are producing an annual amount of 1.42 million tons of ammonium sulfate at our three bases in the world. We have the largest production capacity for ammonium sulfate among manufacturers in Japan. Due to increased bio-ethanol production and the global tendency to boost food production in response to the growing population, ammonium sulfate demand has been rapidly expanding since fiscal 2006, and the price is also rapidly rising.

**Yamane:** Effective use of byproducts represents an eco-friendly movement that is needed today. Cement is also environmentally friendly in that waste can be used as its material.

**Tamura:** At our Ube, Isa, and Kanda Cement Factories, we annually accept about 3.4 million tons of waste and byproducts to reuse them as raw materials and fuels. Cement factories are said to be "supreme recycling factories," and we accept a variety of waste, including incineration ash, sludge, wastewater, waste plastic and wood, distilled spirit lees and waste tires, at our cement factories.

**Yamane:** You would not be able to achieve supreme recycling if you did not have the necessary technologies and development abilities. In your capacity as president, please publicize more about UBE's capabilities.

**Tamura:** I do think it necessary. The UBE Group is composed of companies engaged in different business segments (chemicals, construction materials, machinery, coal, and others), so even employees of the Group do not always know much about what





At the UBE i Plaza

the Group is doing in business segments other than their own. To solve this problem, we published a feature article on the rankings of UBE products in the May 2008 issue of our in-house magazine, thereby showing employees how widely UBE Group products are used in the world. In addition, we highlighted the features of these products at briefings held for journalists and analysts. Subsequently, in November 2007, we opened UBE i Plaza. The UBE Group, however, is not simply in pursuit of manufacturing "overwhelmingly No. 1 in the world" products. Without blindly expanding our business, we are and will be producing socially useful products that only we can manufacture based on our unique technologies.

**Yamane:** This policy seems to support the long-term stable management of UBE. What can I call this policy?

**Tamura:** I call it "global niche" policy. In the past we pursued "self supply policy" and "No. 1 policy." For example, the Isa Cement Factory installed a kiln that was the largest (at that time) in the world, and built a large cement tanker and a limestone transportation vessel for itself. The Factory also constructed an expressway for its exclusive use to transport limestone and cement clinker. As a going concern, however, we must not only pursue the expansion of business, we must also ensure our profitability.

**Yamane:** Unlike the image of UBE seen from outside the company, it is actually a multifaceted company. It has a corporate structure that is not easily affected by vicissitudes in the world or by economic trends. Furthermore, it has been achieving long and strong growth by entering new business fields one after another, not remaining trapped in one single field. The UBE Group seems to have a strength that manufacturers of only one product item do not have. With such a wide range of product items, you might be able to achieve sales of ¥1 trillion.

**Tamura:** We did pursue that target once. Since around 1999, however, in order to build a more robust corporate structure, we have been pressing forward with the selection and concentration of our business operation. In our long history, we sometimes failed in a business, and we sold some businesses. Although we

have been keeping the same organizational framework since our foundation, the corporate structure has been forged into a more robust one. It is important to ensure the sustainability and profitability of our business on a long-term basis, instead of just trying to expand its size. We have been improving our operating income ratio year by year while reducing our interest-bearing debt.



**Kazuma Yamane**

Nonfiction writer. Born in Tokyo in 1947. Graduated from the Faculty of Foreign Languages, Dokkyo University. Collected data and materials on manufacturing and environmental problems all over the world and gave more than 500 lectures on the threat of global warming. In 1997, proposed the making of an environmental revolution-industrial revolution centered on the environment. His publications include *Kankyo Kakumei* (Kodansha, also translated into Korean), *Metal Color Retsuden Tetsu* (Shogakukan), and *Kenja-no Digital* (Magazine House). Official website: <http://www.yamane-office.co.jp/>

## Message from the President

### Premise for Corporate Activities – Living and Prospering Together

**Yamane:** Today I saw for myself that the UBE Group is upholding the philosophy of “living and prospering together” across the organization. This long-standing philosophy is indeed the spearhead of today’s CSR-oriented management.

**Tamura:** Sukesaku Watanabe, the founder of UBE, often used this phrase as his favorite slogan. The UBE Group started with a silent partnership under the name of Okinoyama Coal Mine, and Mr. Watanabe, who had become its first chairman, had a strong love for his hometown and regarded the development of the organization and the local community as equally important. Based on this philosophy he made social contributions by promoting the establishment of local infrastructures. Specifically, he took initiatives to build water supply and sewage systems, construct railroads, open schools and hospitals, and found an electric power company to supply electricity to more locales. Mr. Watanabe was a man of deep insight. He planned to enter other industries, including the chemical industry, thinking that it would become difficult for the company to keep sustainable development with the local community if it continued to confine itself to the field of coal, which was a limited resource. Accordingly, he started new businesses one after another, which provided the foundations of our present business segments. Over 110 years since its founding, the UBE Group has been conducting operations by incorporating the slogan of “living and prospering together” while implementing the corporate philosophy of “creating an industry with infinite possibilities from the finite resources of coal.” The UBE Group has thus long been committed to CSR activities as part of its operations.

**Yamane:** So a company began conducting economic activities in a democratic and considerate manner in the city of Ube. It is surprising that the philosophy of the founder has passed down from generation to generation for such a long time. It is also wonderful that the employees of today are well aware of the efforts made by the founder.

**Tamura:** A framed copy of Mr. Watanabe’s handwritten motto, “living and prospering together,” is posted on the wall of the reception room in our head office. Based on this slogan as our mental backbone, we have been striving to maintain sustainable development with the local community.

### UBE Group’s Environmental Measures

**Yamane:** By the way, global warming is progressing at an unexpected pace, and environmental measures are becoming the world’s first priority. What environmental measures and anti-global warming measures has the UBE Group been implementing?

**Tamura:** Under the slogan of “living and prospering together,” we have been steadily taking environmental measures for local inhabitants, which are represented by the environmental program launched in Ube City in 1949 (see page 11). We have been continuing these environmental measures, clearly stating our reduction targets for various greenhouse gas emissions (see pages 44 and 45). More recently, we have implemented a CDM project in Thailand (see pages 10 to 13).

**Yamane:** I have been insisting that manufacturers should contribute to the environment through their manufacturing activities. Do you have any products that help protect the environment?

**Tamura:** We do have such products. For example, Heliofresh marine fragrance, which is used as a material for perfumes, is an environmentally friendly product. UBE became the first, and is still the only, company to chemically synthesize a marine fragrance. In the past, as marine fragrances were extracted from sassafras wood, a member of the laurel family, UBE is contributing to the protection of forests through its chemical synthesis technology. In addition, we developed a technology to change the colors of waste plastic to recycle them in a large variety of color tones. This technology has already been adopted by home appliance and automobile manufacturers. As for our waterborne polyurethane dispersion coating material that contains no organic solution, we have concluded a technology licensing agreement with a British manufacturer and will enter the market for environmentally friendly coating materials on a full scale. In addition, our humidity control interior board, named Yasashii Kabe, absorbs and decomposes hazardous substances such as formaldehyde and is effective in preventing the sick house syndrome.

**Yamane:** In addition to manufacturing eco-friendly products, you are also promoting a shift to new environmentally compatible



production systems, aren't you?

**Tamura:** Yes, we are. We are improving the existing production processes while conducting R&D for new products. We can make unlimited contributions to the environment through the power of chemistry. We would like to make use of our chemical abilities based on our technology platform.

**Yamane:** In preparing for today's interview, I was thinking about what type of entity the UBE Group is. Today, by talking with you, it has now become clear to me. The UBE Group is a "polyhedral" business entity composed of facets made of mirrors. The facets (= business segments) support each other and they reflect the changes of the times. As time passes, the entity turns in some other direction so that the facet that glitters most faces the front. It is a "super-polyhedral" business entity, or it is an entity like a mangrove. It has a lot of roots (=history) intertwined under the ground and its trunks and leaves (=business and products) can grow in both fresh water and seawater (in an external environment). Fish and crabs gather to its fallen leaves and their excretory substances (=waste) in turn support the growth of the tree. Because it is a plant, it purifies water (= environmentally friendly) and seasonally blossoms (= develops new products and topics). The UBE Group is like a group of trees that grow in harmony with the surrounding environment. Moreover, the Group is like a forest composed of both coniferous and broadleaf trees.

**Tamura:** You are the first person to use such analogies to depict the UBE Group.

**Yamane:** Maybe I have praised the Group too much.

**Tamura:** New species have been found in that forest, perhaps because it is a natural forest.

**Yamane:** As for actual trees and forests, are you engaged in afforestation and forest protection activities as part of your social contribution activities?

**Tamura:** In the Ube District, we launched our forest volunteer activities in 2005. At our sites, flowers are voluntarily planted every year by employees. The Ube Chemical Factory won prizes at the flower bed contests held by Ube City in the spring and fall of 2007, and it also won a prize for excellence at the flower planting campaign held by Yamaguchi Prefecture in fall of the same year.

**Yamane:** Companies are substantially increasing their corporate value through social contribution activities.

**Tamura:** In the past, we mainly made tangible contributions, such as the improvement of infrastructures and donation of city halls and gymnasiums. In the future, we will make more intangible (cultural) contributions. UBE has two foundations: the UBE Foundation and the Watanabe Memorial Culture Association. We would like to make use of these foundations in an even more proactive manner. To this end, we plan to invite Japan Philharmonic Orchestra to Ube City to hold a charity concert at Watanabe Memorial Hall in August 2008 and to hold similar concerts at local hospitals and junior high schools. We would like to provide local inhabitants with a range of opportunities to enjoy music on a continual basis. We also opened UBE i Plaza as our comprehensive information center in November 2007, which provides us with a means to make intangible cultural contributions. Since its opening, the center has been visited by many people. In addition, we, for the first time, participated in the regional campaign held to introduce industrial facilities located in



With a statue of the founder, Mr. Watanabe

the Ube District. I hear that tours of local industrial facilities, including the Ube Cement Factory and the roads constructed by UBE, were given during the campaign and that these tours were very popular among participants. We plan to participate in the campaign again this year.

## Creating a Society Full of Dreams and Hopes through the Power of Chemistry

**Yamane:** As I said at the beginning of this interview, stakeholders who support UBE expect the Company to disclose what potentials it has and to release surprisingly interesting news to the public. In your capacity as president, please continue to tell about your future plans and contributions that you plan to make in an eloquent manner.

**Tamura:** It is really important to give appealing messages for both inside and outside the company. I will first focus on how to describe the business of the UBE Group in an easy-to-understand manner.

**Yamane:** Finally, I would like UBE to release a technology or product that will become a topic of conversation both inside and outside Japan once every two to three years. The company has sufficient capabilities and platforms to achieve this. To this end, how about establishing a "future solution center" as a company-wide organization to develop products that will be of use in the future society?

**Tamura:** I greatly expect that some aerospace materials and pharmaceuticals will be successful in the near future as next-generation products. It takes many years to develop new products, but we will continue our efforts to provide people with useful products, never losing our hopes and ambitions. Of course I would like to examine the establishment of a "future solution center."

# Outline of UBE Group

## Corporate Profile

Company Name:	Ube Industries, Ltd.
Founded:	June 1, 1897
Consolidated:	March 10, 1942
President and Group CEO:	Hiroaki Tamura
Capital:	¥58.4 billion (as of March 31, 2008)
No. of Employees:	11,058 (consolidated) 3,544 (unconsolidated) (as of March 31, 2008)

## Business Profile

UBE contributes widely to society with its diversified products in the following five business segments: Chemicals and Plastics (nylon resin, synthetic rubber, etc.); Specialty Chemicals and Products (electronics and battery materials, pharmaceutical products, etc.); Cement and Construction Materials; Machinery and Metal Products (heavy machines, industrial machines, aluminum wheels, etc.); and Energy and Environment (coal and electric power).

## Main Products by Business Segment

### Chemicals & Plastics Company

- Main products: Caprolactam, nylon resins, industrial chemicals, and synthetic rubber

### Specialty Chemicals & Products Company

- Main products: Polyimide, battery materials, gas separation membranes, fine chemicals, and pharmaceuticals

### Cement & Construction Materials Company

- Main products: Cement and ready-mixed concrete, recycling of resources, calcia and magnesia, and specialty inorganic materials

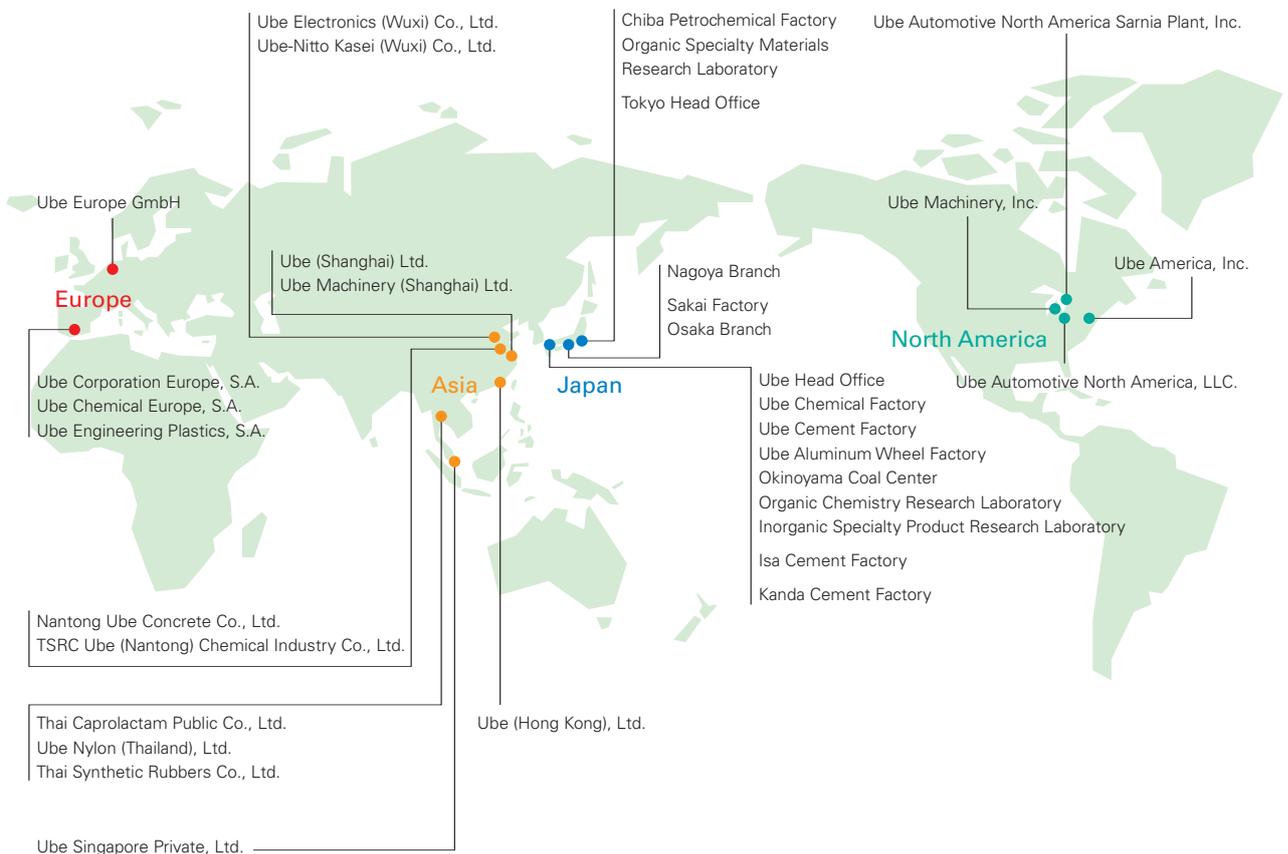
### Machinery & Metal Products Company

- Main products: Machines and aluminum wheels

### Energy & Environment Division

- Main products: Coal and electric power

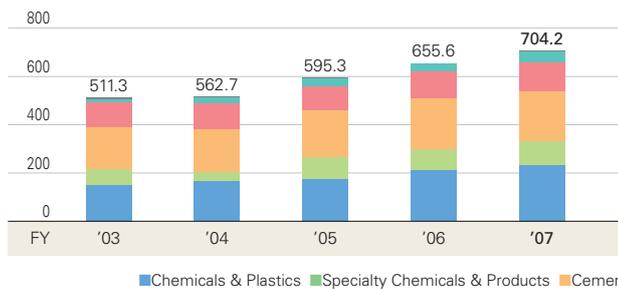
## Domestic and Overseas Bases



## Major Financial Data (Consolidated)

### Net Sales

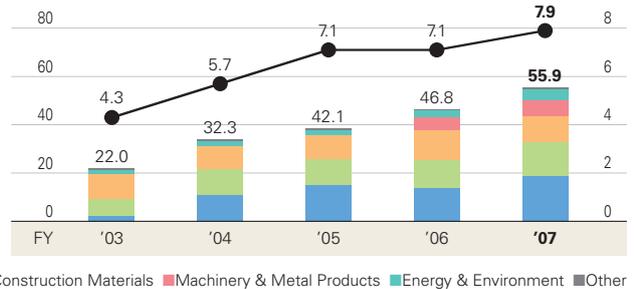
(Billions of yen)  
1,000



### Operating Income and Operating Income Ratio

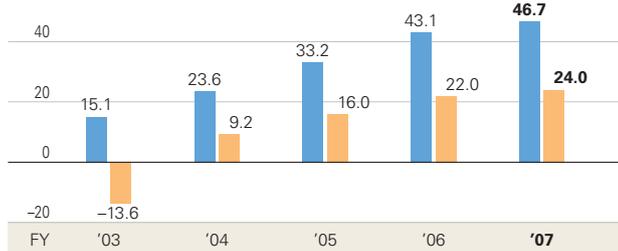
(Billions of yen)

● Operating income ratio (%)



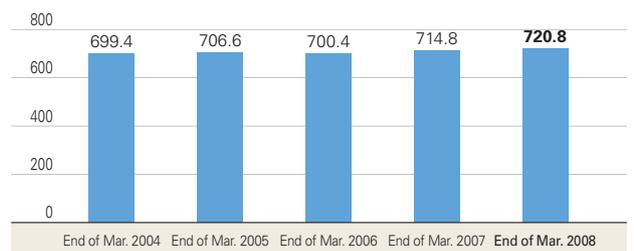
### Ordinary Income and Net Income

(Billions of yen) ● Ordinary income ● Net income



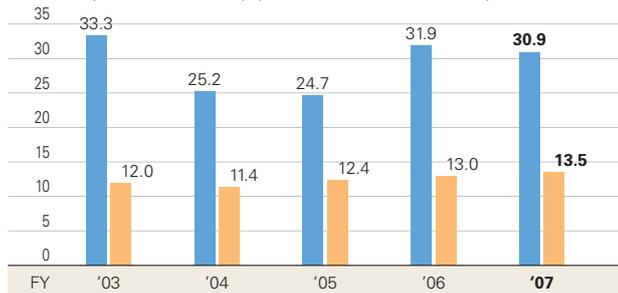
### Total Assets

(Billions of yen)  
1,000



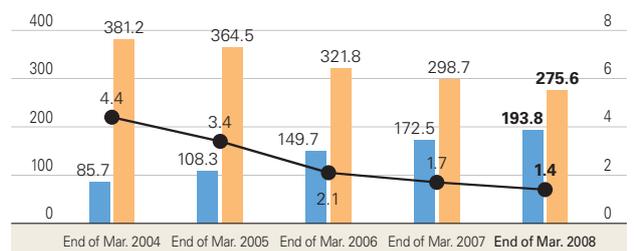
### Plant and Equipment Investment, and R&D Expenditures

(Billions of yen) ● Plant and equipment investment ● R&D expenditures

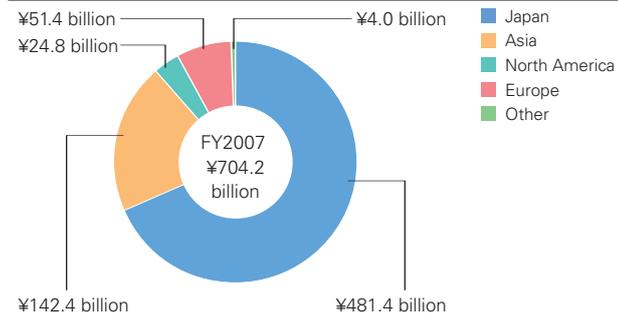


### Equity Capital, Net Debt, and Net Debt/Equity Ratio

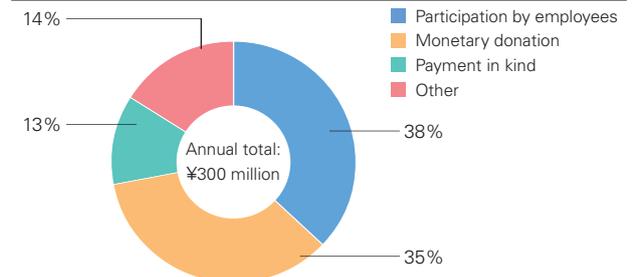
(Billions of yen) ● Equity capital ● Net debt balance ● Net debt/equity ratio (times)



### Net Sales by Region (FY 2007)



### Breakdown of Social Contribution Activities in FY2007 (By Type)



We breathe air to live.

It is said that per-capita lifetime CO<sub>2</sub> emissions amount to 30 tons.

Companies also breathe air and use energy to manufacture their products. The UBE Group is taking on the challenge of conducting its corporate activities without negative impact on the environment.

We will continue to make strenuous efforts to develop technologies and conduct business activities that contribute to global environmental preservation.

# Feature Article 1

## Toward the Creation of a Sustainable Society

### UBE Group's Environmental Initiatives



The UBE Group set the Group Global Environment Preservation Promotion Committee and has been implementing measures to protect the global environment. In addition, we initiated a project to promote anti-global warming measures in 2008, with an eye to make prompt responses to global warming, which is being aggravated at a rapid pace. In the following, we will report on the initiatives taken by the UBE Group for protection of the global environment.

# For Protection of the Global Environment

## UBE Group's Environmental Management

The UBE Group has been making efforts to conduct its business activities with less environmental impact, toward the establishment of a recycling-based society.

In 1949, as early as 18 years before the enforcement of the Basic Law for Environmental Pollution in Japan, we participated in Ube City's environmental program to prevent pollution in the city through cooperation between the industry, government, academia, and citizens. This joint initiative was highly evaluated both inside and outside Japan, and Ube City was added to the Global 500 Roll of Honour of the United Nations Environment Programme (UNEP) in 1997. Now, after nearly 60 years since its launch, the project has been continued by incorporating new perspectives.

In order to tackle global warming as an urgent problem, we are proactively implementing measures to reduce the emissions of greenhouse gases by reviewing the amount of energy required for our production activities, shifting from heavy oil to natural gas, recycling waste as materials and fuels, and utilizing energy-saving processes. In addition, we are oriented toward green sustainable chemistry (GSC), which means to ensure the health and safety of people and the environment throughout product lifecycles by the use of chemical technology. Based on this concept, we provide products such as Heliofresh and PUD (waterborne polyurethane dispersion). Moreover, we have developed a range of technologies and products that help protect the global environment through CO<sub>2</sub> emission reduction, recycling, water purification, and energy conservation. These include silicon nitride powder, separation membranes, and the waste plastic recycling technology that we have developed by using our unique technological abilities and applying existing technologies. (See pages 56 to 61.)



Resin recycled in a variety of color tones

## The Kyoto Protocol and UBE Group's Reduction Target

In the Kyoto Protocol, which was adopted in December 1997 (and put into effect in February 2005), numerical targets for greenhouse gas emissions are set by country.

The UBE Group, in its medium-term management plan, set its CO<sub>2</sub> reduction target by 2010 at 12% and set the emissions of greenhouse gases other than CO<sub>2</sub> at 100,000 tons in CO<sub>2</sub> equivalent. We are pressing forward with measures to achieve these targets by the end of fiscal 2009, however, earlier than planned. (See pages 44 and 45.)

As part of these measures, we are making efforts to reduce the emissions of nitrous oxide (N<sub>2</sub>O), which has a global warming potential that is nearly 310 times higher than that of CO<sub>2</sub>. In January 2007, we changed the nitric acid manufacturing process at Ube Chemical Factory. Since then the Factory has been using a catalyst to break down nitrous oxide into nitrogen and oxygen, thereby reducing the emissions of N<sub>2</sub>O by 100,000 tons per year. Furthermore, changes are being made to the caprolactam production process at Thai Caprolactam Public Co., Ltd. (TCL), with the operation of the improved process scheduled to start in January 2009. In this initiative at TCL, the UBE Group implemented a CDM project for the first time as the Group. CDM is one of the Kyoto mechanisms approved in the Kyoto Protocol.



Catalyst that breaks down N<sub>2</sub>O

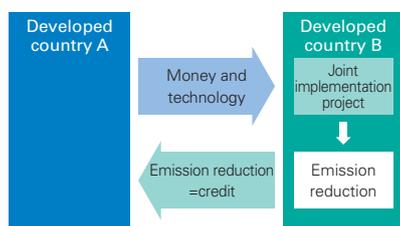
### Outline of the Kyoto Protocol

<b>Number of signatories to the Protocol</b>	Developed countries: 39 (including Japan, the EU, Russia, and Spain) Developing countries: 101 (including China, India, Thailand, and African countries)
<b>Target period</b>	2008 to 2012 (five years)
<b>Target gases</b>	Six greenhouse gases including carbon dioxide (CO <sub>2</sub> ) and nitrous oxide (N <sub>2</sub> O)
<b>Reduction target</b>	To reduce emissions by the amount equivalent to 5.2% of the total CO <sub>2</sub> emissions in developed countries in 1990 (Japan: 6% reduction; the entire EU: 8% reduction; Russia: 0% reduction; Spain: 15% increase)

### Outline of the Kyoto mechanisms (mechanisms established to help the countries achieve the numeric targets set in the Kyoto Protocol)

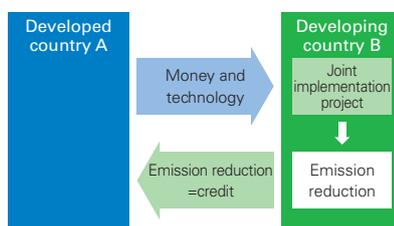
#### Joint Implementation (JI)

Developed country A can invest in emission reduction projects ("joint implementation projects") in developed country B as an alternative to reduce emissions in its own country.



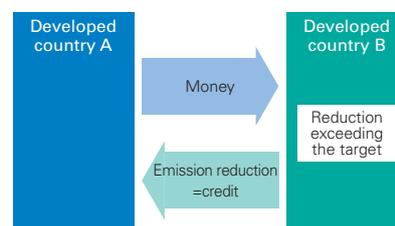
#### Clean Development Mechanism (CDM)

Developed country A can invest in emission reduction projects ("joint implementation projects") in developing country B as an alternative to reduce emissions in its own country.



#### Emissions Trading (ET)

In order to achieve their respective emission reduction targets, developed countries A and B trade emission credits.



Source: Data prepared by the Japanese Ministry of Economy, Trade and Industry

In Thailand, the Asia Operational Unit (AOU) of UBE's Chemicals & Plastics Company is implementing a range of measures to protect the global environment while attributing importance to communication with the local community. In the following, we will report about a CDM project implemented by Thai Caprolactam Public Co., Ltd. (TCL), one of the three companies comprising the AOU. This project has been implemented as the first CDM project approved by the Thai government in the field of chemistry, and as the first CDM project to be conducted by the UBE Group.

# CDM Project in Thailand

## Q. What kind of approach is the Thai government taking toward the protection of the global environment?

**Charunya:** The Thai government has declared that it will implement environmental protection measures according to global standards. Thailand has no binding greenhouse gas emission targets in the Kyoto Protocol, but global warming cannot be prevented without commitment by all the nations to the reduction of their environmental impact. As an example of initiatives taken by the Thai government, those who plan to start a new business with high environmental impact, such as the operation of a factory, hotel, or department store in the country, should perform an environmental assessment for the facilities to be opened. Based on the assessment results, they have to examine, make, and implement plans to operate their business in consideration of their environmental impact. The Thai government is thus highly environment-oriented.

## Q. What measures is the AOU implementing for the environment?

**Charunya:** The AOU newly established its CSR promotion center in January 2008, under which four departments were formed, one each in charge of local relations, safety and environmental health, quality assurance, and independent fire fighting. The AOU has set three-year targets, aiming to become the first corporate organization to acquire CSR certification in 2010, for the issuance of which the Thai government is now making preparations.

As for recent environmental measures taken by the AOU, the Unit adopted a reverse osmosis membrane for its wastewater treatment equipment, thereby achieving a 30% water saving. It

also replaced its boiler with one of the steam recovery type to reduce its CO<sub>2</sub> emissions, curtailing the emissions of greenhouse gases through the CDM, and reduced the release of air pollutants such as SO<sub>x</sub> and NO<sub>x</sub>. The AOU makes it a principle not to increase the emissions of substances of concern even if they have launched a new project.

Japanese companies are excellent in terms of environmental and safety measures. We expect that the rich experience and abundant expertise that UBE has long been accumulating ahead of others over the 111 years of its history will be transferred to the Unit in a systematic manner.

## Q. What kind of CDM project is TCL implementing?

**Nishida:** In the process of manufacturing intermediate material for the production of caprolactam, N<sub>2</sub>O, which is one of the greenhouse gases specified in the Kyoto Protocol, is emitted. N<sub>2</sub>O is used for anesthesia and is indeed a safe and nontoxic substance. We therefore released it into the air in the past. The substance, however, has a global warming potential that is about 310 times higher than CO<sub>2</sub>, and so we decided to reduce the emissions of this greenhouse gas by adopting a technology to decompose it. The use of this technology enables us to reduce the emissions by about 170,000 tons a year in CO<sub>2</sub> equivalent.

TCL used the CDM, one of the Kyoto Protocol mechanisms, as a means to reduce greenhouse gas emissions. The project is implemented jointly with Mitsubishi Corporation.

**Pichai:** We launched the project in 2005 as a brand new initiative in Thailand. At that time, the Thai government was approving and recommending CDM projects to promote the use of renewable



Poster on the environment and safety, created by employees



UBE Group's audit on the environment and safety



Education and enlightenment on CSR



Technical center in charge of R&D at the AOU

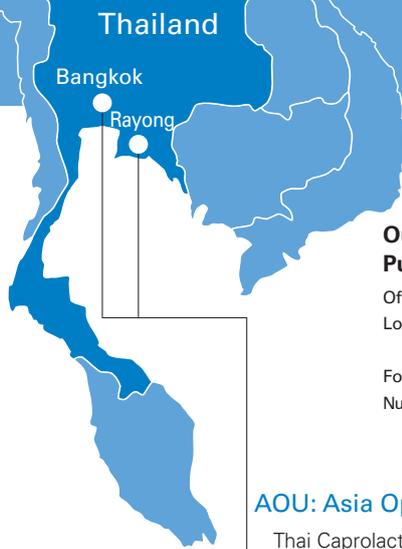


Control center that centrally manages all the plants

# Feature Article 1

## Toward the Creation of a Sustainable Society

UBE Group's Environmental Initiatives



### Outline of Thai Caprolactam Public Co., Ltd. (TCL)

**Official name:** Thai Caprolactam Public Co., Ltd.  
**Location:** [Head office] Bangkok, Thailand  
[Factory] Rayong, Thailand  
**Founded:** 1990  
**Number of employees:** 410  
(as of the end of March 2008)



### AOU: Asia Operational Unit

Thai Caprolactam Public Co., Ltd. (TCL)  
Ube Nylon(Thailand) Ltd. (UNT)  
Thai Synthetic Rubbers Co., Ltd. (TSL)

energy such as bio-fuels and those to reduce the use of energy, and we had to explain in detail why the CDM project to reduce greenhouse gas emissions by the improvement of a production process was also important. Because it was a new initiative, we had much difficulty in obtaining approval for the project from the authorities. We have, however, overcome the problems, and are taking on the challenge of preventing global warming. We have been strongly implementing the project according to the predefined schedule with the partner company.

**Nishida:** We have been implementing the project over the three years since 2005, during which we faced a range of challenges. Looking back, however, I have no painful memories regarding the project. Rather, I am bracing my nerves, thinking that we will face true difficulties in the future. According to our schedule, the equipment will be installed in October 2008, and it will be in operation from January 2009.

### Q. Please tell us about your future plans.

**Charunya:** In July 2007, the Thai government established a committee to manage emissions of greenhouse gases, and has thus been strengthening its CDM system. The TCL's CDM project is the first CDM project approved by the Thai government in the field of chemistry, and it is attracting much attention from people as a socially significant project for both the country and the UBE Group. I am introducing this initiative to people at various opportunities to promote the CDM.

The AOU wants to achieve accountability for all its stakeholders. One of our strengths is to be on close terms with our neighbors. Because we know our neighbors face to face, we want to conduct our corporate activities in an honest manner to an even greater degree. We will strengthen our self-audit system, operate our business by placing first priority on safety and due consideration for the environment, and implement social contribution measures in order to grow with society as a member of the UBE Group.

### Major Members of the CDM Project



Managing Executive Officer and GM of the Asia Operational Unit, Chemicals & Plastics Company, Ube Industries, Ltd. and CEO of Thai Synthetic Rubbers Co., Ltd., Ube Nylon (Thailand) Ltd., and Thai Caprolactam Public Co., Ltd.

#### Charunya Phichitkul



Vice President, Thai Caprolactam Public Co., Ltd.

#### Yoichi Nishida



Project Manager, Thai Caprolactam Public Co., Ltd.

#### Pichai Atatchipan



## Feature Article 2

# Dialogue with Stakeholders

Sukesaku Watanabe, the founder of UBE, upheld the philosophy of “living and prospering together.” Based on this slogan through the ages, the UBE Group has been forming favorable relationships and developing together with all its stakeholders, including shareholders, customers, employees, and local inhabitants. In November 2007, we opened our comprehensive information center, Ube i Plaza, to showcase the history, present, and future of the UBE Group. The UBE Group will continue to have dialogues with its stakeholders by using this information center as a forum for exchange.

### Outline of UBE i Plaza

- Opened on:** November 27, 2007  
**Total floor space:** 530 m<sup>2</sup>  
**Exhibition space:** 330 m<sup>2</sup>  
**Opening hours:** 9:00 a.m. to 5:00 p.m.  
**Closed on:** Weekends, national holidays, and Company holidays  
**Access:**
- About one and a half hours by plane from Tokyo and about 15 minutes by car from Yamaguchi Ube Airport to Ube head office
  - About two hours by Shinkansen bullet train from Osaka and about 40 minutes by express bus or about 50 minutes by JR Ube Line from JR Shinyamaguchi Station to Ubeshinkawa Station
- Address:** 1978-96, Kogushi, Ube, Yamaguchi 755-8633  
**Phone:** +81(836)31-2111 (Tour desk)

\*UBE i Plaza will be open to visitors by appointment only. Those wishing to tour the facilities are asked to contact the Company in advance (detailed above).

We look forward to welcoming you to our center.

UBE i Plaza welcomes many visitors from both inside and outside Japan. Through contacts with these visitors, I can daily make new findings and learn new things. I would like to welcome more people to the facilities, which serve as a communication forum where visitors can deepen their understanding of the UBE Group.



Attendant  
**Satoko Yano**

## Floor Map



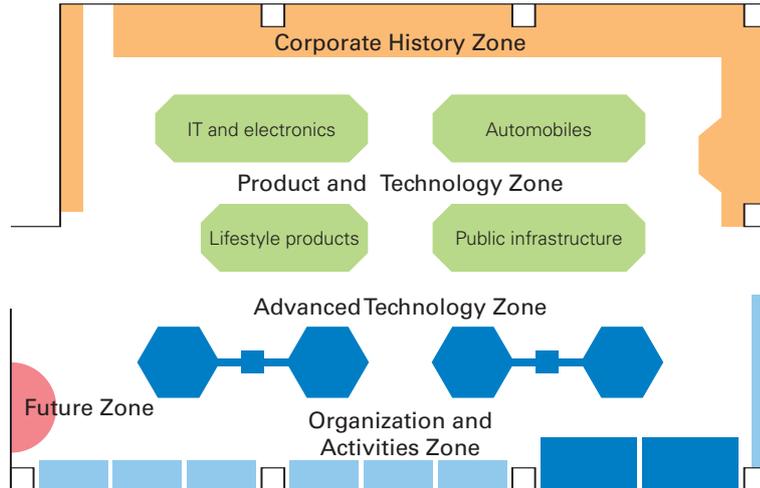
● **Corporate History Zone**  
Materials on the history of the UBE Group are displayed, and the episodes in its history since its foundation to present are introduced, focusing on 10 themes.



● **Product and Technology Zone**  
The UBE Group's products in the following four categories are displayed: IT and electronics, automobiles, lifestyle products, and public infrastructure.



● **Future Zone**  
State-of-the-art technologies in the world are introduced, such as heat resistant materials for spaceships and artificial satellites.



● **Advanced Technology Zone**  
The UBE Group's advanced technologies are introduced in an easy-to-understand manner, using experiment machines and simulation monitors.



● **Organization and Activities Zone**  
This zone is divided into seven sections, including the sections introducing the UBE Group's CSR activities and environmental business. The Group's unique and global business operations are introduced.

## As a Forum for Exchanges between UBE and Society

Established as Okinoyama Coal Mine in 1897, the UBE Group celebrated its 110th anniversary in 2007. In order to commemorate this milestone, we opened our comprehensive information center, UBE i Plaza, on the first floor of Ube head office in Ube City, Yamaguchi Prefecture, where the Company was founded and still has its largest operation site. This information center introduces the UBE Group's history, products and technologies.

UBE i Plaza welcomes visitors to the UBE Group and serves as a forum for information and opinion exchange. In addition, it is expected to be utilized for industrial tourism and become a base for regional promotion.

The exhibition space is divided into the following five zones: the Corporate History Zone, the Product and Technology Zone, the Advanced Technology Zone, the Organization and Activities Zone, and the Future Zone. In these zones, the UBE Group's history is introduced, its products and the finished products that are manufactured by using the Group's products are displayed, and its business details and initiatives are explained. Many touch panel displays are installed in the zones, which visitors can use to read detailed explanations.

We have 5,000 visitors to our factories in the Ube District on an annual basis, and we expect that the annual number of visitors to the facilities will increase to 10,000 due to the opening of UBE i Plaza.

## Comments from Visitors



At the center, we can see many displays that embody the Company's long standing management philosophy of "living and prospering together." The displays represent local assets in which locales can take pride. I expect that the center will serve as a forum for exchange in industrial tourism and other activities, which in turn will promote the Company's CSR activities and lead to the sustainable development of the UBE Group and the local community.

**Yukio Oda, Director of the Regional Promotion Division, Yamaguchi Prefecture**



The history of UBE, which started with business in the coal industry, is an integral part of the history of Ube City's industrial development. At the facilities, we can see historically valuable materials and obtain a variety of information. I hope that the Company will deepen its links with the local community through the facilities, as a company that is friendly and open to the local community.

**Kazuo Nishiyama, Director of the Economic Affairs Department, Ube City**



I did not know much about the business of UBE. At the facilities, I was surprised to know that UBE is engaged in such modern businesses. The materials that are being manufactured by the Company are used in a variety of products that we use in our daily lives, but because the product labels do not show the UBE name, we do not recognize that fact. UBE is thus working behind the scenes. It took me an hour to take a quick look at the displays. It would take much more time to look at them closely.

**Kumi Ota, Daiichi Chuo Kisen Kaisha (visited the center for a commercial purpose)**

I had surprising experiences at UBE i Plaza, where a lot of things were displayed. A dragonfly moved on my palm, driven by the heat of the palm. At the factory, a "UFO catcher" for carrying coal was picking up as much as 20 tons of coal at one time. The double trailer was astonishingly large! It was 30 meters long. The driver's seat of the trailer looked so cool.

**A third grader from Magura Elementary School in Ube City (visited the center as part of a school tour to the UBE factory)**



# Further Improving the System to Strengthen CSR Activities in Line with the Basic Policies for CSR

In April 2008, we newly established the Group CSR Committee and the CSR Department to enhance our system for promoting CSR activities. Through these organizations, we are pressing on with the strengthening of CSR activities, which is one of the basic policies set forth in our medium-term management plan.

## UBE Group's Basic Policies for CSR

The UBE Group is committed to achieving sustainable growth of the Group and society at large, regarding its Basic Policies for CSR as a mainstay of its business activities. The Group also makes continuous efforts to ensure appropriate information disclosure, thereby building even stronger bonds of trust with its stakeholders, including shareholders, customers, suppliers, employees, and local communities.

### Basic Policies for CSR

Regarding corporate social responsibility in terms of the economy (management), the environment and social ties, UBE will:

- Continually improve profits and earnings, and maintain a sound financial position in order to increase corporate value
- Provide products, services, and systems that contribute to safety and the environment, reduce the use of harmful materials and waste, and institute policies for the prevention of global warming in order to contribute to the conservation of the global environment
- Establish compliance procedures to improve corporate governance and create a better working environment as a part of activities to contribute to society

### UBE Group's CSR Matrix

Item	Basic policy	Shareholder	Customer	Supplier
Mission/reason for existence	<ul style="list-style-type: none"> <li>● To increase the corporate value and contribute to stakeholders through fair corporate activities, and to keep sustainable growth and achieve symbiosis with society on a long-term basis</li> </ul>	<ul style="list-style-type: none"> <li>● Continuous improvement of corporate value</li> <li>● Stable and appropriate provision of dividends</li> <li>● Appropriate information disclosure</li> </ul>	<ul style="list-style-type: none"> <li>● Provision of products and services that are safe, of high quality, and useful, at reasonable prices</li> <li>● Prompt response to customer needs</li> </ul>	<ul style="list-style-type: none"> <li>● Fair and unbiased trade</li> </ul>
Corporate governance and internal control	<ul style="list-style-type: none"> <li>● To establish highly transparent corporate governance and an efficient and disciplined enforcement system</li> </ul>	<ul style="list-style-type: none"> <li>● Improved corporate governance and internal control</li> <li>● Stable and appropriate provision of dividends</li> <li>● Better financial structure</li> </ul>	<ul style="list-style-type: none"> <li>● Assurance of fair trade and competition</li> <li>● Formulation of a business continuity plan (BCP)</li> </ul>	<ul style="list-style-type: none"> <li>● Fair and unbiased purchasing</li> <li>● Establishment of relations of trust</li> </ul>
Compliance	<ul style="list-style-type: none"> <li>● To comply with corporate ethics and social norms without fail</li> <li>● To comply with laws and regulations</li> </ul>	<ul style="list-style-type: none"> <li>● Prevention of insider trading</li> <li>● Appropriate disclosure of negative information</li> </ul>	<ul style="list-style-type: none"> <li>● Compliance with related laws and regulations, including the Antimonopoly Act and the Construction Business Act</li> <li>● Strict confidentiality of customer information, etc.</li> </ul>	<ul style="list-style-type: none"> <li>● Respect for intellectual property</li> <li>● Compliance with related laws and regulations, including the Act against the Delay in Payment of Subcontract Proceeds, etc. to Subcontractors and the Law for Securing the Proper Operation of Worker Dispatching Undertakings and Improved Working Conditions for Dispatched Workers</li> </ul>
Environment, safety, and quality	<ul style="list-style-type: none"> <li>● To conduct business activities in consideration of the environment</li> <li>● To provide environmental information</li> <li>● To manufacture and provide high-quality and safe products and services in a safe manner with safe technologies</li> </ul>	<ul style="list-style-type: none"> <li>● Promoting better understanding of environment-, safety-, and quality-oriented management</li> </ul>	<ul style="list-style-type: none"> <li>● Development and provision of products and services that help reduce environmental impact</li> <li>● Provision of high-quality and safe products and services</li> <li>● Compliance with related laws and regulations</li> </ul>	<ul style="list-style-type: none"> <li>● Implementation of more measures for the reduction of environmental impact</li> <li>● Clarification of safety and quality requirements</li> <li>● Promotion of green purchasing</li> </ul>
Information disclosure and communication	<ul style="list-style-type: none"> <li>● To disclose information to stakeholders appropriately and in a timely manner and expand communication channels with them</li> <li>● To appropriately manage information</li> </ul>	<ul style="list-style-type: none"> <li>● Disclosure of information about the management status, CSR, and risks</li> <li>● Appropriate information provision to analysts</li> <li>● Organization of a general meeting of shareholders in an open manner</li> </ul>	<ul style="list-style-type: none"> <li>● Provision of appropriate information about products, services, and safety</li> </ul>	<ul style="list-style-type: none"> <li>● Clear statement of procurement policies</li> <li>● Promotion of communications</li> </ul>
Human rights and labor	<ul style="list-style-type: none"> <li>● To respect the human rights of people who are affected by the Group's corporate activities</li> <li>● To respect the human rights of employees, including those of partner companies</li> </ul>	<ul style="list-style-type: none"> <li>● Promoting better understanding of and increased support to human rights</li> </ul>	<ul style="list-style-type: none"> <li>● Smooth access to information about products and services</li> <li>● Provision of advertisements that are not disagreeable to consumers</li> </ul>	<ul style="list-style-type: none"> <li>● Provision of equal trading opportunities</li> </ul>
Social contribution	<ul style="list-style-type: none"> <li>● To conduct social contribution activities toward the creation of a sound and sustainable society</li> </ul>	<ul style="list-style-type: none"> <li>● Promoting better understanding of and increased support for the corporate social contribution activities (regarding Ube Industries Central Hospital, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>● Promoting better understanding of the corporate social contribution activities (regarding Ube Industries Central Hospital, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>● Promoting better understanding of the corporate social contribution activities (regarding Ube Industries Central Hospital, etc.)</li> </ul>

## Significance of the UBE Group CSR Matrix

The UBE Group is conducting its CSR activities in line with its Basic Policies for CSR, regarding the fulfillment of CSR as an integral part of its management. Based on this concept, the Group CSR Committee (chaired by President Tamura of UBE) has summarized the CSR-related targets to be achieved in the Group's

corporate activities in a table called a CSR matrix.

The CSR matrix shows the targets to be achieved by the directors and employees of the UBE Group by CSR item and by stakeholder. We will make all members of the Group aware of this CSR matrix and ensure that all the departments of the Group perform their duties in line with it. To this end, we will annually monitor the progress made toward the achievement of the targets shown in the matrix.

	Employee	Local community and government	Group-wide organization	Major department in charge
	<ul style="list-style-type: none"> <li>Appropriate salaries</li> <li>Stable employment</li> <li>Human resource development</li> <li>Sharing of information and targets</li> <li>Support for higher quality of life</li> </ul>	<ul style="list-style-type: none"> <li>Stable and fair employment</li> <li>Appropriate tax payment</li> <li>Contribution to and dialogue with the local community</li> </ul>	<ul style="list-style-type: none"> <li>Determination of fair, highly transparent, and well-balanced targets and their implementation policies</li> </ul>	<ul style="list-style-type: none"> <li>Fair, prompt, and efficient implementation and supervision of the policies</li> </ul> →Implemented by the head office, branches, and factories of UBE, and by all the departments of other Group companies
	<ul style="list-style-type: none"> <li>Awareness on management policies</li> <li>Better understanding of CSR activities</li> <li>Business performance based on assigned roles</li> <li>Loyalty to the organization (through stock options, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate tax payment</li> <li>Appropriate political donation</li> </ul>	General meeting of shareholders, board of directors, internal control system, outside directors, Group Strategic Management Committee, Group CSR Committee, and others	Corporate Planning Dept., Auditing Dept., CSR Dept., and Internal Control System Building Project Team
	<ul style="list-style-type: none"> <li>Compliance education based on the Action Guidelines for Business Conduct, etc. and improvement of the educational system (for e-learning, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Compliance with related national laws, regulations and ordinances, more stringent prefectural standards, and other agreements</li> </ul>	Group CSR Committee, Compliance Committee, and Restricted Cargo and Export Committee	CSR Dept., Legal Dept., Corporate Planning Dept., and Intellectual Property Dept.
	<ul style="list-style-type: none"> <li>Improved education and enlightenment on the environment, safety and health, quality, and energy conservation</li> <li>Creation and provision of a safe and comfortable workplace</li> </ul>	<ul style="list-style-type: none"> <li>Compliance with environment-, product-, and service-related laws and regulations</li> <li>Proactive measures to reduce environmental impact</li> </ul>	Group Environment and Safety Committee, Group Product Liability and Quality Committee, and Crisis Management Committee	Environment & Safety Dept., REACH Promotion Office, and General Affairs Dept.
	<ul style="list-style-type: none"> <li>Promotion of in-house communications</li> <li>Disclosure of information about working conditions</li> <li>Management of information security and protection of privacy</li> <li>Promoting better understanding of the treatment of intellectual property rights</li> </ul>	<ul style="list-style-type: none"> <li>Promoting better communication with the local community and related organizations (through the RC Regional Dialogue and UBE i Plaza)</li> <li>Establishment of favorable relations with mass media companies</li> </ul>	Group CSR Committee and Information Security Committee	CSR Dept., Investor Relations & Public Relations Dept., Information System Dept., Environment & Safety Dept., and Ube Corporate Service Dept.
	<ul style="list-style-type: none"> <li>Improvement of the personnel system to enable a variety of talents to display their abilities</li> <li>Improved health and safety at workplaces and better health management by employees</li> <li>Sincere dialogues with employees and the labor unions</li> <li>Discontinuance of discriminatory employment practices and provision of equal employment opportunities</li> <li>Education on respect for human rights</li> </ul>	<ul style="list-style-type: none"> <li>Creation of employment</li> <li>Compliance with labor-related laws and regulations</li> <li>Discussions and dialogues toward the creation of a society with high respect for human rights</li> </ul>	Personnel Policy Committee	Human Resources Dept.
	<ul style="list-style-type: none"> <li>Encouragement of and support for voluntary participation in social activities</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of social contribution activities and improvement of the relevant system (through the UBE Foundation, etc.)</li> <li>Better understanding of the corporate social contribution activities (Ube Industries Central Hospital, etc.)</li> </ul>	Group CSR Committee and CSR Promotion Committee	CSR Dept., Ube Corporate Service Dept., and General Affairs Dept.

### Enhancement of the CSR Promotion System

Regarding the fulfillment of CSR as an integral part of its management based on its Basic Policies for CSR that were established in July 2005, the UBE Group has been strengthening its system to foster environmental, safety, and compliance measures while continuously improving its profitability and financial position to increase its corporate value.

Furthermore, in its medium-term management plan, Stage Up 2009, which was launched in fiscal 2007, the Group set forth the following basic policies: (1) establishment of a platform for profitability that ensures sustainable growth; (2) sustained improvement of financial position; and (3) strengthening of CSR activities. Based on these policies, we examined the measures to enhance our CSR promotion system. As a result, we founded the Group CSR Committee (chaired by President Tamura of UBE) as of April 1, 2008, under which there are five committees, including the CSR Promotion Committee and Compliance Committee, which manage and facilitate social contribution activities, and the Information Security Committee. Moreover, the CSR Department has been newly established as an organization to support the CSR promotion system.

Under this new system, the UBE Group has been implementing its CSR measures based on the previously mentioned CSR matrix, supported by the aforementioned committees and the Group Environment and Safety Committee. We are endeavoring to increase our corporate value through fair corporate activities and win more trust from our stakeholders while achieving sustainable growth and symbiosis with society on a long-term basis.



**Kazuhiko Okada**  
 Director in Charge of Group CSR,  
 Representative Director,  
 Vice-President and Executive Officer

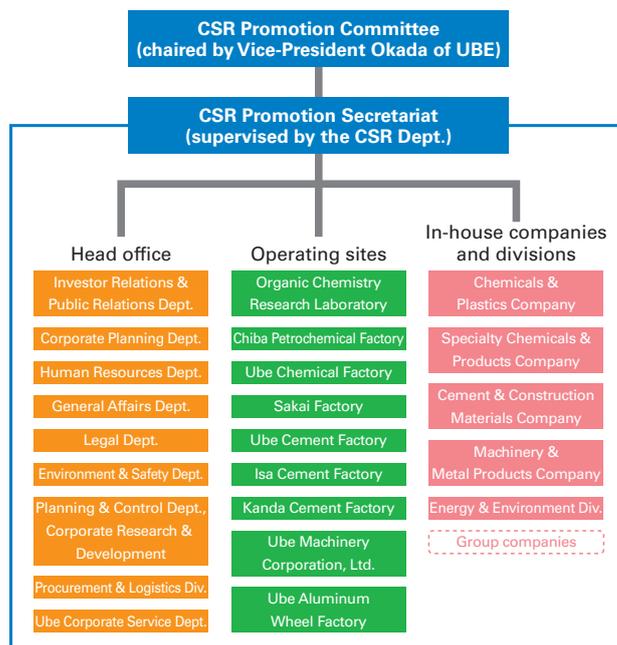
### Group CSR Committee

The UBE Group has been conducting its business activities based on its Basic Policies for CSR, with both its existing Group Environment and Safety Committee and the newly established Group CSR Committee reporting to the Group Strategic Management Committee, which is under direct supervision of the Group CEO (President Tamura of UBE).



### CSR Promotion Committee

The CSR Promotion Committee is in charge of the UBE Group's social contribution activities and CSR reports. Supervised by the director in charge of CSR and in cooperation with the CSR Promotion Secretariat, the Committee is collecting data on the Group's CSR activities and implementing measures to boost such activities.



# Establishing a Corporate Governance System to Nurture Sustainable Business Operations

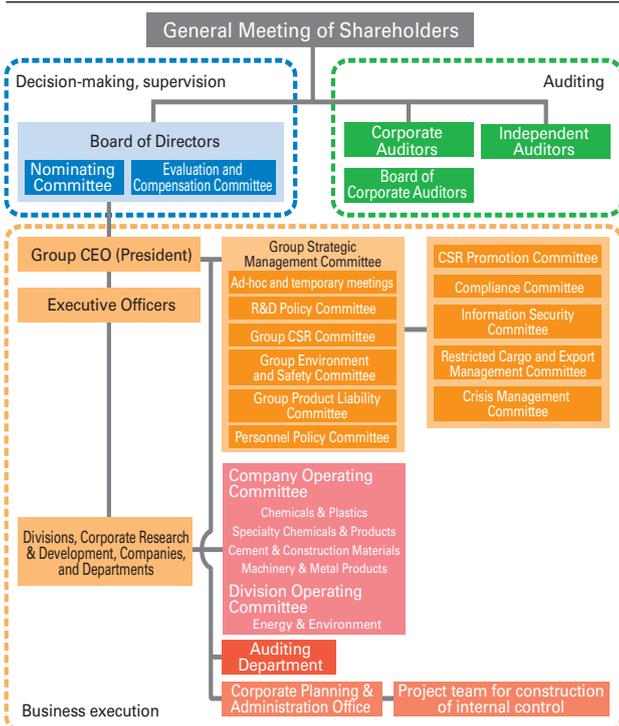
We believe the establishment of a corporate governance system is of utmost importance in working to steadily improve our corporate value on a long-term basis, fulfill our duties to stakeholders, and foster their trust.

## Corporate Governance System

In June 2001, UBE adopted an executive officer system with the aim of separating governance and management functions. The management team currently consists of eight directors and 23 executive officers, of whom six are also directors. The Board of Directors, which is chaired by a director who is not an executive officer, makes decisions on important management-related matters in accordance with laws and regulations, Company’s Articles of Incorporation and the Board Regulations. It also supervises the activities of directors and executive officers to ensure that all duties are being performed appropriately and efficiently. Executive officers carry out business operations in accordance with management policies determined by the Board of Directors, using authority delegated to them by the President & Representative Directors.

In fiscal 2005, two outside corporate directors were appointed to the Board of Directors. Their role is to bring a third-party perspective to decision-making, thereby ensuring transparency and objectivity in management. Currently, the Board is chaired by one of the outside corporate directors. In addition, UBE has positioned a Nominating Committee and an Evaluation and Compensation Committee as subsidiary entities of the Board of Directors, allowing greater flexibility in the activities of the Board. Both the committees are chaired by outside directors. We limit the terms of directors and executive officers to one year to

## Group Corporate Governance Structure



promote flexibility in appointing directors and ensure results-oriented management.

## Audit System

Internal audits are conducted by UBE’s six-member Auditing Department, which reports directly to the CEO. Audits cover the entire UBE Group, including UBE’s overseas subsidiaries. Aspects checked include internal control and compliance with laws, regulations, and manuals. The purpose of these audits is to identify potential risks to the UBE Group’s business activities. The General Manager of the Auditing Department is also a member of Groupwide risk management organizations, including the Compliance Committee, and works closely with these committees to strengthen risk management systems.

The corporate auditor organization consists of four corporate auditors, of whom two are appointed from outside the Company, together with two staff members in the Corporate Auditor’s Office. The task of corporate auditors is to ensure that directors and executive officers perform their duties appropriately by attending important meetings, including meetings of the Board of Directors, examining important accounting documents, and by receiving reports on operations from directors and other officers.

The corporate auditors and the Auditing Department regularly exchange information, and when the auditors conduct audits, some of the Auditing Department staff will accompany and support them as required. The auditors and the Department are thus in close cooperation with each other. The corporate auditors also regularly meet the independent auditors to listen to their auditing plans and obtain information about their implementation status.

## Decision-Making System

- Board of Directors**  
 On behalf of shareholders, the Board of Directors discusses and makes decisions on the issues provided for by the Companies Act, the basic policies of the Company, and important enforcement issues from medium- to long-term perspectives.  
 To achieve greater management flexibility, the Board of Directors has the Nominating Committee and Evaluation and Compensation Committee as subordinate entities that assist the Board.
- Group Strategic Management Committee**  
 The Group Strategic Management Committee is responsible for discussing and making decisions on key matters concerning resource allocation, items that need to be adjusted from an overall Group perspective, and other key matters that affect the Group as a whole, in accordance with the Group Management Guidelines and Group Strategic Management Committee rules.
- Company Operating Committee and Division Operating Committee**  
 The Company Operating Committee and the Division Operating Committee are responsible for discussing and making decisions on key matters, such as business strategy, at the corporate level and divisional level, respectively. They engage in these activities for Ube Industries and other UBE Group companies in accordance with the Group Management Guidelines and the rules that govern the Company Operating Committee and Division Operating Committee.

# Ensuring Compliance as a Prerequisite for a Company to Be Trusted by Society

We are committed to compliance in our management, based on the recognition that compliance is a prerequisite for a company to fulfill its social responsibility.

## Compliance Measures

It is of course important for companies to provide society with useful products and services, but as a prerequisite for such business activities, companies have to comply with laws, regulations, and social norms to gain trust from society.

The UBE Group began to implement measures to enhance its compliance system in April 2003, with the aim of creating a corporate culture in which every employee complies with social rules, including laws and regulations, and with in-house regulations, without fail. As part of these efforts led by the president of UBE, contacts have been established, both within and outside the Company, to which employees can promptly report problems.

In addition, we have been holding e-learning seminars and conducting compliance audits to ensure the effectiveness of our compliance system since fiscal 2006.

### Revision of the Action Guidelines for Business Conduct

In March 2003 and March 2006, we revised the Action Guidelines for Business Conduct, which was formulated in May 1998 to summarize the action guidelines to be followed by the directors and employees of the UBE Group. In order to promote better understanding and awareness of the revised Guidelines, we have distributed copies of them to the directors and employees of the UBE Group.

### Enlightenment by e-Learning

In fiscal 2006, we began providing online training on compliance for all employees, including temporary staff and employees dispatched to other companies. Since then we have been holding this training session annually, choosing several compliance themes for each session.

### Training for New Employees

New employees learn about the basics of compliance during the training session provided to them when they enter the organization.

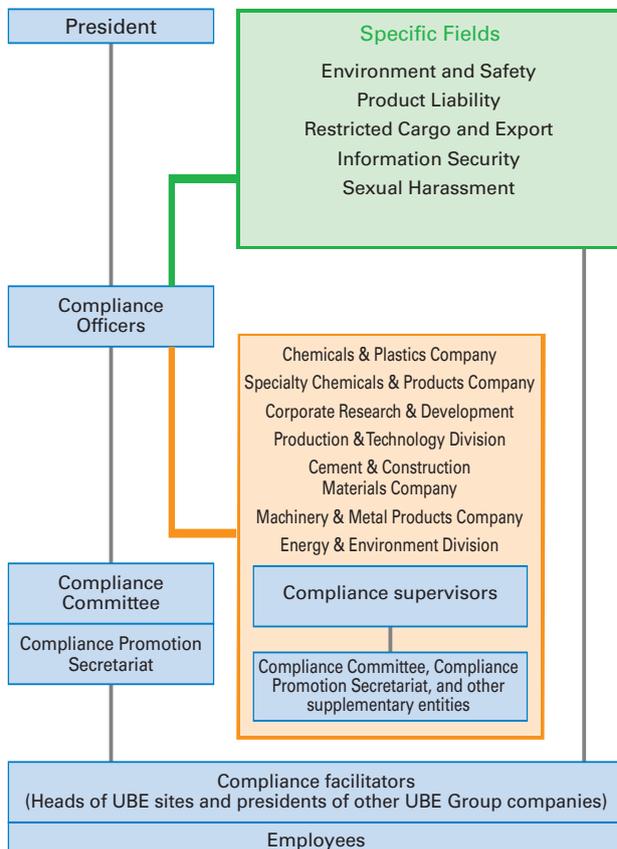
### Enlightenment via the In-House Intranet

We have posted a manual on our compliance system on the intranet and are operating an in-house website where specific examples are used to explain compliance issues, thereby helping employees deepen their understanding about the importance of compliance.

### Noncompliance Notification System (UBE C-Line)

To promptly detect and deal with compliance violations, we have established a system that allows such problems to be reported either directly to the department in charge of compliance or to a legal advisor outside the corporate organization.

## Compliance System



## Overview of the Compliance System

- Compliance Officers (CO)**  
 Two directors were appointed as Compliance Officers (one of whom was appointed as Chief Compliance Officer). Their task is to promote and ensure compliance throughout the UBE Group by supervising compliance-related activities.
- Compliance Committee**  
 The Compliance Committee advises the Compliance Officers and deliberates on important compliance-related issues. To ensure transparency, a legal adviser has been invited to serve as an outside committee member.
- Compliance Promotion Secretariat**  
 This unit administers compliance-related activities under the direction and supervision of the Compliance Officers.

# Implementing Optimal Measures to Identify and Deal with Risks Associated with Business Operations

We are improving and strengthening our risk management system so that we can implement optimal measures to identify and deal with the risks that might have a serious impact on our management.

## Risk Management System

Companies conduct activities to make maximum profit while dealing with a range of risks. The UBE Group is improving its risk management system so that it can implement measures to identify and assess the probability and impact of risks that might prevent the attainment of its business objectives.

In order to deal with specific types of risks, we have established the Group Environment and Safety Committee and the Group Product Liability and Quality Committee. For the entire Group, these two committees formulate and actively implement policies concerning environment and safety, and product safety, respectively.

In addition, we have established the following committees to deal with individual risk categories.

### Information Security Committee

Due to the digitization of a wide range of information, companies are facing the risk of information leakage, falsification, and loss, and these risks are having a serious influence on their corporate activities.

The UBE Group has established its information security policies to ensure information security, and it is raising employees' awareness of these policies and monitoring their compliance. We also established information security rules and regulations to ensure appropriate information management.

### Restricted Cargo and Export Management Committee

We constantly reinforce awareness within our Group of the fact that the basic requirement of export management is to prevent illegal export or supply of goods and technologies that are subject to export controls under laws and regulations designed to maintain international peace and stability, such as Japan's Foreign Exchange and Foreign Trade Act.

### Crisis Management Committee

Companies face various risks beyond national boundaries. These risks include labor accidents at factories, other workplace accidents, environment- and safety-related accidents, disasters, noncompliance with laws and regulations, sexual harassment, and personnel- and labor-related problems such as human rights issues. If these risks are detected, we should respond to them promptly and continue our corporate activities as part of our social responsibilities.

The UBE Group has prepared an emergency manual (E-Manual) for employees working in Japan, and an overseas emergency manual for employees stationed overseas and those on business trips overseas. We are thus building a comprehensive risk management system on a global scale.

### Formulation of a BCP\*<sup>1</sup> and Earthquake Countermeasures

The UBE Group is now formulating a BCP to ensure that it can promptly make necessary responses and smoothly resume its business operations in the event that a large earthquake rated at 6 or higher on the Japanese earthquake scale takes place in the Tokyo metropolitan area and causes serious damage to the functions of its head office.

For the emerging threat of new influenza varieties assumed in the BCP, we prepared a manual and distributed its copies to employees, both inside and outside Japan, so that they can make appropriate responses to the risk.

The Group Earthquake Countermeasures Committee under the Group Environment and Safety Committee is promoting measures to minimize the damage caused by earthquakes and to ensure early recovery from such disasters. In fiscal 2006 to 2007, the Committee revised the UBE Group's disaster management manual. In addition, it has been introducing a system to promptly and correctly confirm the safety of employees and their families in case of disasters at an increasing number of the Group's sites. This system was introduced to UBE's head office in Tokyo and Nagoya Branch in fiscal 2006 and to its Sakai Factory, Chiba Petrochemical Factory, Organic Specialty Materials Research Laboratory, and Osaka Branch in fiscal 2007.

\*1 BCP stands for business continuity plan, which is made to minimize the suspension of business in the event of a disaster and to recover its functions as early as possible to ensure business continuity.

# With Stakeholders



**The UBE Group will proactively conduct CSR activities in compliance with its Action Guidelines for Business Conduct, thereby gaining even more trust from all its stakeholders.**

## **Action Guidelines for Business Conduct**

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### **Chapter 1 Corporate Mission and Social Responsibility**

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We will strive to create new value and ensure continuing corporate development, while also actively fulfilling our corporate social responsibilities and contributing to sound social development.

### **Chapter 2 The Law and the Corporation**

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We will comply with Japanese and foreign laws and regulations and corporate regulations, behave as members of a sound society and avoid involvement with anti-social elements.

### **Chapter 3 Business Activities and Value Creation**

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We will develop and supply useful and safe technologies, products and services that allow us to earn the trust of society.

### **Chapter 4 Impartiality and Sincerity**

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In our business activities in Japan and overseas, we will strive to maintain fair and free competition and perform our tasks in good faith.

### **Chapter 5 Safety and the Environment**

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We will work independently and actively to ensure safety and fulfill humanity's shared mission to protect the global environment.

### **Chapter 6 Human Rights and the Workplace**

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We will respect human rights in our business activities in Japan and overseas and develop healthy, bright and motivating workplaces.

### **Chapter 7 Information and Corporate Activities**

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We will strive to protect information and ensure accurate disclosure of corporate information, and maintain active and effective communication with society in general.

### **Chapter 8 International Society and the Corporation**

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As members of the international community, we will contribute to the development of the regions in which we are involved.

### **Chapter 9 Establishing Corporate Ethics**

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We will cooperate closely with UBE Group companies, suppliers and customers to establish corporate ethics based on these Action Guidelines.

From left to right:  
Party held to celebrate the 40th anniversary of Ube Chemical Europe, S.A.; UBE's 102nd Ordinary General Meeting of Shareholders (see page 23); UBE Group factory tour held for the families of its employees (see page 32); Work that won the Ube Industries, Ltd. Prize at UBE Biennale '07 (see page 34)

# Enhancing Transparency in Management to Become a Highly Reliable Company

In order to become a highly reliable company, we ensure timely, appropriate, and fair information disclosure, promote investor relations (IR) activities, and have interactive communication with shareholders and investors.

## IR Activities

UBE conducts its IR activities in good faith, striving to promote understanding of its management strategy and business conditions in the capital market and to implement transparent management in order to earn the trust of the market. To this end, we are disclosing related information in a timely, appropriate and fair manner.

In addition, we are actively increasing opportunities for interactive communication with market participants such as shareholders, investors, and securities analysts, thereby promoting mutual understanding and incorporating the market perceptions and evaluations into our management.

Based on the aforementioned IR policy, we are holding briefing sessions and tours of our factories that target both domestic and foreign investors as a means to directly communicate with them. We are also dispatching a range of information through our website.

For individual investors, we began publishing a semiannual financial report titled "Stockholder Communication" in fiscal 2007 to replace conventional business reports. We use this report to introduce UBE's business details and strategies in a more intelligible manner. UBE will continue its commitment toward timely, appropriate and fair information disclosure, and will implement more measures to ensure interactive communication with investors.



Briefing session held for analysts in May 2008



The first page of the IR information site

**UBE Group's IR information:**  
<http://www.ube-ind.co.jp/english/ir/index.htm>

## Ordinary General Meeting of Shareholders

In late June of every year, UBE holds its ordinary general meeting of shareholders in an open and transparent manner in Ube City, Yamaguchi Prefecture, where the Company was founded. More than 1,000 shareholders attend this meeting every year. After the end of the meeting, we hold events that help shareholders deepen their understanding of UBE's business, including a brief explanation of the medium-term management plan by the president and an exhibition to introduce the Company's business. We send invitations for the meeting to shareholders rather early so that they have enough time to examine the agenda for the meeting. We also provide notification of the meeting via our website to increase the availability of relevant information.

## Dividend Policy

UBE recognizes the payment of dividends to shareholders as an important responsibility to be fulfilled by the Company for its shareholders, and makes it a fundamental policy to pay dividends at a level that is commensurate with its earnings results. At the same time, we must also bear in mind the need to maintain an adequate level of retained earnings in order to secure profits for shareholders on a medium- and long-term basis. We decide the amount of dividend to be paid to shareholders based on these overall considerations.

Based on our medium-term management plan, we will pursue steady increase of the dividend payment amount in line with the improvement of our business performance, setting the target payout ratio at 20% to 25%. In fiscal 2007, we increased our dividend per share to five yen, one yen above the level of the previous fiscal year.

## Ratings

UBE regards "sustained improvement of financial position" as one of its management priorities, and the entire UBE Group has been making efforts to achieve this target. As a result, Rating and Investment Information, Inc. improved its rating of UBE by one notch, to BBB ("stable"), in October 2007. We will push ahead with measures to ensure the establishment of a platform for profitability and sustained improvement of financial position, which will in turn further raise our rating.

In recognition of our diversified environmental measures, we received the highest rating available from the Development Bank of Japan in its Loan Program for Promotion of Environmentally Conscious Management. At the same time, we became the first comprehensive manufacturer of chemicals to receive a special commendation from the Bank. Subsequently, in March 2008, we received a loan from the Bank under the Program.

# Complying with Relevant Regulations and Appropriately Disclosing Information to Ensure the Provision of Safe and High Quality Products

At the UBE Group, the Group Product Liability and Quality Committee plays a central role in the implementation of intensive measures to comply with the REACH regulation, introduce GHS labeling in a planned manner, deal with hazardous substances contained in products, and strengthen quality management activities.

## The EU's REACH Regulation\*1

Under the REACH regulation, all chemical products manufactured in or exported to the EU must be registered again after undergoing toxicity and risk assessments. Among the products made by the UBE Group, the regulation applies to those exported to the EU from Japan and Thailand as well as to those manufactured by Group companies in Spain. The first step in enforcing the regulation, the pre-registration period, began in June 2008. The registration process will begin after the pre-registration period ends, but the registration deadline can be postponed, depending upon the quantity of the substance to be registered. Under these conditions, the UBE Group will eventually complete the registration process for all its products in 2018.

To comply with the REACH regulation, the UBE Group has to register a number of products. In order to ensure successful completion of the registration process, which will last for a long time, we established our REACH Promotion Office in September 2007. The Office will take charge of the registration operations and lead the entire UBE Group toward the smooth completion of the process.

In fiscal 2007, we conducted in-house surveys on our products manufactured in or exported to the EU, including the number of product items, their production and export quantities, and usages. We also conducted external surveys in cooperation with users and suppliers. For some products, we did even more: we participated in the activities of consortia\*2, and collected data and made assessments concerning the toxicity of the products.



Labeling for the EU

## Material Safety Data Sheet (MSDS)\*3

To ensure the safe use of our chemical products, we have prepared MSDSs for all our products and we disclose them on our website and through other media. The MSDSs are also posted on the intranet so that all the employees can share the information on product safety.

We have set the criteria for MSDSs in our Group regulations so that new information on the risks and toxicity of our products and on changes made to the relevant laws and regulations are constantly collected and incorporated into the data sheets. In fiscal 2007, we updated or newly created MSDSs, including foreign language versions, for 200 products.



Webpage showing an MSDS

## Warning Labels

We clearly state the precautions for safe handling by affixing warning labels to the containers of our products. We are also actively introducing GHS labeling\*4 as well as the Container Yellow Card labeling system\*5 promoted by the Japan Chemical Industry Association.



Warning label for high-purity ammonia water

### Glossary

- \*1 **REACH regulation:** Regulation on chemical substances enforced in the EU in June 2007 (REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals.)
- \*2 **Consortia:** Formed voluntarily through agreements between companies to jointly obtain information required for the REACH registration and register the information obtained with the European Chemicals Agency
- \*3 **MSDS:** Documentation containing the product name, physicochemical properties, usages, and hazard and toxicity information
- \*4 **GHS labeling:** Labeling under the Globally Harmonized System of Classification and Labelling of Chemicals, which requires information on hazard, toxicity, and safe handling to be included on product warning labels
- \*5 **Container Yellow Card (labeling system):** A warning label that includes an emergency measure guideline number and U.N. number, used in the event of accident in conditions where other information formats would be impractical because of mixed product or small order shipments

## Safety of Transportation

The Transportation Subcommittee, which is placed under the Group Product Liability and Quality Committee, makes an annual action plan, based on which the regional transportation councils are implementing measures to prevent transportation accidents and improve the quality of transportation.

The UBE Group is making concerted efforts with its partner companies to ensure the safety of its transportation activities. Specifically, we regularly check whether Yellow Cards<sup>\*6</sup> (emergency communication cards) are carried by our truck drivers, communicate and exchange transportation information among ourselves, examine the causes of transportation accidents, and conduct disaster prevention drills for the drivers of tankers.

## Participation in Chemical Safety Management Initiatives in Japan and Overseas

We have registered as a "sponsor" for oxalic acid and 12-aminododecaic acid under the Japan Challenge Program<sup>\*7</sup>, in which we participate. We have already submitted a written plan, which includes the presently available safety information regarding the two substances and the additional test results.

Through the Japan Chemical Industry Association, we also actively participate in and support the ICCA<sup>\*8</sup> in its voluntary Long-range Research Initiative (LRI), which focuses on the effects of chemical substances on human health and the environment.

## Response to Green Procurement<sup>\*9</sup> by Customers

Consistent efforts are made to reduce the use of harmful materials in all products and incorporate design aspects that make for easy recycling, particularly in the electronic and electrical equipment manufacturing industry. As a supplier of both raw and processed materials, UBE takes a number of positive approaches to help its customers realize green procurement. As UBE itself is required to appropriately manage procured raw materials, it has established its own unique standards to promote the control of the substances contained in procured parts/raw materials.

## Quality Control Activities

The UBE Group is systematically building a quality management framework and conducting activities to improve the quality of its products, based on its quality management system that complies with relevant ISO standards. In fiscal 2006, we launched quality and product safety audits. Subsequently, in fiscal 2007, we implemented measures to manage substandard products and deal with complaints concerning our products in a more appropriate manner, to manage the resulting cost loss, and to ensure product safety as part of our compliance measures.

### Message

#### Prepared for the REACH Registration

The UBE Group is one of the world's leading manufacturers of chemicals in terms of the number of types, quality, and volume of chemicals it manufactures. We have production bases in Japan, Thailand, and Spain in the EU, and we have begun preparations to comply with the REACH regulation in a manner that differs from the approaches taken by other Japanese companies. The REACH Promotion Office has been preparing for the regulation in cooperation with other departments for about a year, and we are now well prepared for the pre-registration process that is to be conducted as the first step in enforcing the regulation. The UBE Group will complete pre-registration of nearly 100 substances by the end of this September through a concerted effort by all the Group companies, including those in Thailand and Spain.



**Mitsuyoshi Ishimoto**

REACH Promotion Office,  
Environment & Safety Dept.



### Glossary

<sup>\*6</sup> **Yellow Card:** Emergency card on which the product name, properties, handling methods, emergency measures, and emergency contact number are entered in preparation against transportation accidents

<sup>\*7</sup> **Japan Challenge Program:** Chemical safety inspection program launched in Japan in June 2005 to gather information on the safety of existing chemical substances through industry-government collaboration and to disseminate that information to the public

<sup>\*8</sup> **ICCA:** International Council of Chemical Associations

<sup>\*9</sup> **Green procurement:** Procurement of materials conducted by companies based on their individual safety and environmental criteria established to meet the requirements of relevant legal regulations, including the EU RoHS Directive that restricts the use of certain hazardous substances in electrical and electronic equipment

# Trading with Suppliers in a Fair and Unbiased Manner Based on Free Competition

The UBE Group treats suppliers as good business partners and is committed to trading with them in a fair and unbiased manner to mutually achieve sustainable development.

## Approach to the Act against the Delay in Payment of Subcontract Proceeds, etc. to Subcontractors

We train all employees on this Act through e-learning, and hold individual briefing sessions for each of the related in-house departments, thereby ensuring that they understand and comply with the provisions.



Briefing session on the Act held for a related department



Training through e-learning

## Approach to Green Purchasing\*1

In line with the Law on Promoting Green Purchasing, the UBE Group encourages its employees to choose eco-friendly products in purchasing stationary products, paper, and work uniforms. We aim to increase the use of eco-friendly copy paper to 100%, and soybean ink is used to print this CSR report on 100% recycled paper. Through these efforts, the UBE Group's green purchasing rate has improved to 62%.

## Basic Purchasing Policies

### ● Fair and unbiased trading

We are committed to treating our suppliers in a fair and unbiased manner based on free competition, and constantly search for opportunities to deal with new suppliers. We will cooperate with suppliers on a fair and equal footing and promote mutual understanding and relations of trust over a long-term basis.

### ● Objective selection of suppliers

We will choose suppliers from the viewpoint of economic rationality by comprehensively examining their quality, prices, and delivery schedules.

### ● Compliance with laws and regulations, and confidentiality

We will comply with all related laws and regulations and with social norms, and will protect all the confidential information obtained in our purchasing activities.

### ● Green procurement and purchasing

We will choose environmentally friendly products in our purchasing activities.

## Message

### Promoting Green Purchasing

The UBE Group's green purchasing activities are led by a secretariat comprising three employees from the Purchasing Department and one from the Environment & Safety Department. The UBE Group promotes green purchasing as one of its environmental and safety measures, and we set and implement a priority policy for green purchasing every year. The priority policy for 2008 is to increase the use of eco-friendly copy paper to 100%. The use of eco-friendly products will raise the environmental awareness of employees, and we expect all those concerned to support our activities.



**Hideo Fujimoto**

Purchasing Department,  
Procurement & Logistics Division



## Glossary

\*1 **Green purchasing:** To purchase products and services that have minimal environmental impact from suppliers who are committed to reducing their environmental impact, considering not only the quality and price of the products, but also the environment

# Enhancing Human Resource Development to Help Various Employees Display Their Respective Abilities

Regarding human resources as our most valuable management assets, we attribute importance to the employment of a variety of talents, to human resource development, and to the provision of comfortable working environments.

## Diversification of Employment

### Reemployment System

In fiscal 2006, the UBE Group introduced a reemployment system for retired workers so that they can pass down their skills and abilities, mainly in the area of human resource development. The reemployment period is set at one year, but it can be extended every year until the employee reaches the age at which pensions are payable to him/her. In fiscal 2007, we reemployed about 58% of those retired.

### Employment of People with Disabilities

The UBE Group has been promoting the employment of people with disabilities across the Group, using the relevant expertise accumulated in its special purpose subsidiary named Libertas Ube, Ltd. (established in April 1991). In July 2006, we launched a network to support the employment of people with disabilities (dubbed "UBE Support Net"), thereby promoting the employment of people with disabilities in the UBE area. As of the end of May 2008, 13 people with disabilities are working at nine Group companies, and we are proactively implementing measures to increase the number of these employees as a leading company in the area. Of the 13 employees, three have serious hearing disabilities, but they are working vigorously, one each at three different Group companies. We are now building a remote support system for people with hearing disabilities (dubbed "Sign Language Net"), making effective use of sign language interpreters working for Libertas Ube. By using this IT system, we can respond to those with hearing disabilities quicker than by actually dispatching sign language interpreters to sites where their help is needed. We expect that the system will help promote the long-term employment of people with hearing disabilities.

### Employment of People with Work Experience

In order to have human resources with a variety of skills and experience, we actively employ mid-career workers. The number of mid-career workers employed by the UBE Group, mainly those having expertise in technologies and knowledge, for which Group human resources are insufficient, has been increasing year by year. After entering the Group, these mid-career workers display their abilities by using the work experience gained at the workplaces to which they were assigned in the past.

### Employment Situation

	2005	2006	2007
New graduates (figures in parentheses: those employed as generalists)	99 (33)	124 (49)	131 (46)
Mid-career workers	44	63	107
Percentage of people with disabilities (annual average)	1.96%	2.11%	2.09%

## Our Approach to Human Resource Development

The UBE Group gives top priority to human resources among its management assets, and is committed to developing skilled professionals who can act independently and produce results.

We revised our employee training programs to provide employees with more substantial training in fiscal 2008 and onwards under our human resource development system. Specifically, we improved our career education courses to enhance the management ability of managers, develop international business personnel, and provide supervisors and others with leadership training.

In addition, we have introduced a personnel system incorporating results-oriented and pay-for-performance elements, thereby motivating individual employees to set and pursue their own objectives.

## Training Programs

Career Education (Group Education)	Training by Theme (Group Education, e-Learning)	Selective Training (Group Education, External Courses)	Support for Self-Improvement
<ul style="list-style-type: none"> <li>Guidance and education for new employees</li> <li>Follow-up training for new employees</li> <li>Third-year training</li> <li>Career design training</li> <li>New management training</li> <li>Middle-rank management training</li> <li>New executive training</li> <li>"Refresh" training</li> </ul>	<ul style="list-style-type: none"> <li>Common specialized technology education</li> <li>Patent training</li> <li>Legal training</li> <li>Compliance training</li> <li>Information security training</li> <li>Human rights education</li> <li>Environment and safety education</li> <li>Assessor training, etc.</li> </ul>	<ul style="list-style-type: none"> <li>International business personnel development (Overseas MBA programs, practical training in overseas subsidiaries, and law school programs)</li> <li>Leadership training (Business leadership training and management leadership training)</li> <li>External programs for research and technology personnel (Programs in universities and research institutes in Japan and overseas)</li> </ul>	<ul style="list-style-type: none"> <li>Support for the acquisition of skills and qualifications (Correspondence courses and acquisition of official qualifications)</li> <li>Languages (TOEIC exams and conversational foreign language courses)</li> </ul>

## Environment and Safety Education

We provide employees with practical education on the environment and safety and encourage all employees to acquire the necessary knowledge, practical skills, and relevant qualifications such as public certification required for the operation of equipment in factories.

In addition, we have incorporated mental health training within career education courses (training for new managers, etc.) to ensure that employees receive appropriate training according to their particular circumstances. We have also included the elements of environmental impact assessment in our in-house documents that are circulated for managerial decision-making on capital investment and in written proposals submitted for small-group activities to be conducted within the organization, aiming to raise the environmental awareness of all employees.

## Quality Working Environments

### Relationship with the Labor Union

Management policies could not be successfully implemented without the employees' understanding of and cooperation with the policies.

UBE has been maintaining a favorable labor-management relationship based on the collective labor agreement concluded with its labor union. The two parties frankly exchange opinions and discuss matters at various labor-management meetings, which help management raise employees' awareness of its policies and plans and help the labor union have their opinions incorporated in the corporate management.

### Respect for Human Rights at Workplaces

In its Action Guidelines for Business Conduct, the UBE Group promises that it will not act against social norms and that it will respect human rights and develop healthy, bright and motivating workplaces. We regard respect for human rights as a fundamental rule guiding the corporate activities of the UBE Group.

We have established the Human Rights Education Promotion Committee, which provides human rights education to employees, including training for directors, site training, and external training courses, as a way to help employees respect and work comfortably with each other by understanding and recognizing the importance of human rights issues.

## Prevention of Sexual Harassment and Abuse of Power

As countermeasures against sexual harassment and abuse of power, we provide all employees with education on these unjustifiable conducts so that they can respond appropriately if faced with such problems at their own workplaces. In addition, we have consultants on sexual harassment and the UBE C-Line notification system in place to help employees solve these problems promptly.

## For Better Work-Life Balance

### Leave for Volunteer Activities

UBE employees are able to accumulate leave entitlements for special purposes. In fiscal 2006, this system was expanded to include the use of up to seven days annually for volunteer activities that contribute to society or local communities.

### Childcare and Nursing Care Leaves

To maintain a good balance between their work and private life, UBE employees can also take childcare and nursing care leaves, work flexible hours, or cap the number of overtime hours, depending upon how much time they have to spend in taking care of their children or other family members.

### Number of Employees Taking Childcare/ Nursing Care Leave

	2005	2006	2007
Childcare leave	22	23	23
Nursing care leave	1	0	2

### Flexible Working Systems

We have introduced multiple working systems, including a flextime system and a discretionary labor system, to enable employees to work in a flexible and efficient manner. We are also committed to appropriately managing employees' working hours. For example, we demand that departments with long overtime working hours implement measures to reduce these hours, and ask employees who have worked overtime beyond a certain limit to meet and receive advice from an industrial doctor.

# Supporting Employees to Safeguard Their Health by Providing Them with a Better Work Environment and Industrial Health Services

For employees to live up to their potential at work, it is essential that they look after their physical and mental health. Accordingly, we provide them with health checkups and tips for healthy living, thereby helping them live a healthy lifestyle.

## Developing a Comfortable Workplace

### Meet and Greet Campaign

Since fiscal 2004, the UBE Group has been implementing this campaign to encourage employees to exchange words of greeting and encouragement as a way to promote better communications at their workplaces. As a result of this campaign, employees are now able to consult with or make requests to their colleagues and managers more frankly at their workplaces.

### Segregation of Smoking Areas and Encouragement of No Smoking

In fiscal 2002, UBE began participating in the smoker segregation certification system introduced by Yamaguchi Prefecture ahead of other prefectures. We have already acquired this certification at most of our sites, and employees are now more aware of the importance of segregating smoking areas.

In fiscal 2007, 36.2% of all UBE employees were smokers. To lower this percentage, we will offer further support and encouragement for employees to stop smoking.

## Management of Employees' Health

### Use of Health Checkups

In fiscal 2007, UBE's sites in the Ube District began giving special feedback to employees who had received health checkups. The health checkup reports distributed to employees now reflect not only the checkup results, but also health scores and health cautions for work given by the industrial doctor in charge in consideration of the work environment of individual employees.

This feedback is given as a means to better the work environment and appropriately consider the safety of employees so that they can continue to work in good health.

Moreover, we hold seminars on the treatment of personal information for managers. We also teach them the importance of communication between managers and subordinates through lectures and group work, thereby improving our workplaces to even more comfortable ones.



Industrial doctor providing an explanation at a seminar on the utilization of health checkup results

### Measures to Safeguard Mental Health

In fiscal 2007, UBE held mental health training seminars for new employees, mid-level non-managers, new managers, and mid-level managers. For employees who need mental care or support to come back to work, we make steady efforts to meet their needs through cooperation between our industrial health staff (e.g.; industrial doctors, health nurses, and industrial nurses), staff in charge of personnel and labor affairs, the managers of the employees, and outside expert organizations and doctors.

Other Group companies are also committed to holding mental health training seminars.

### Measures to Improve Dietary Habits and Promote Physical Exercise

Dietary habits comprise an essential part of lifestyle habits. We have improved the meals provided at our dormitories and canteens by the help of nationally registered dietitians and are implementing measures to raise the awareness of employees on the importance of good dietary habits.

In addition, we have distributed pedometers to employees to encourage them to walk at least 10,000 steps a day to burn extra calories.



Measuring the salt level of miso soup



Calorie indication labels affixed to an automatic vending machine

## Message

### Feeling Refreshed by Walking during Lunchtime

I often walk around the office during lunchtime to refresh myself both physically and mentally. By walking and looking far, I can free myself from the eyestrain caused by gazing at the monitor of the OA machine. In spring, I am impressed with young green leaves, and in every season, I can gain some energy from the nature.

Moreover, walking promotes the secretion of beta-endorphin, which helps remove stress on the brain. I will continue to enjoy my walking habit to keep my physical and mental health.



**Itsuko Murakami (left)**  
Administration Dept.,  
Ube Maintenance Co., Ltd.

# Implementing Occupational Safety and Health Measures to Ensure that Employees Can Work Safely

Based on its principle of "Ensuring operational safety shall be the priority in all areas and activities under UBE's commitment to respect human life," the UBE Group promotes the introduction of measures for occupational safety and health at all its sites.

## Measures to Prevent Occupational Accidents

To eradicate occupational accidents, the UBE Group promotes a large variety of activities, including risk prediction training, TPM activities, Hiyari-Hatto activities (to promote measures that prevent near misses), confirmation of safety through actions and set phrases, accident case studies, risk assessment, and custom-designed experience-based training. Concurrently, UBE's Environment & Safety Department regularly audits Group companies and facilities, with respect to their safety management systems, and provides advice including recommendations for improvement.

### Safety Education

As part of a wider education policy, immediately after joining the UBE Group, new employees are taught the importance of the environment, safety, and health. In addition to the practical safety training programs that are implemented in each workplace, managers and executives partake in training on relevant laws and regulations.

### Safety and Health Committee

Safety and Health Committee meetings are held at all factories on a monthly basis, providing the opportunity for participants, including management and labor representatives, to report and discuss safety-related issues. Each meeting ends with a recitation of the "5 do's" and "5 don'ts" from a safety assurance and accident reduction poster that incorporates ideas garnered throughout the UBE Group workplaces. In some factories, staff are required to carry a sheet of paper that describes the content of the poster at all times.



Safety assurance and accident reduction poster

### Acquisition of OSHMS Certification

The UBE Group has established Occupational Safety and Health Management Systems (OSHMS) as a framework for its accident reduction efforts, and encourages all Group companies to acquire OSHMS certification. As a result, all UBE factories and laboratories have acquired the certification (see page 39).

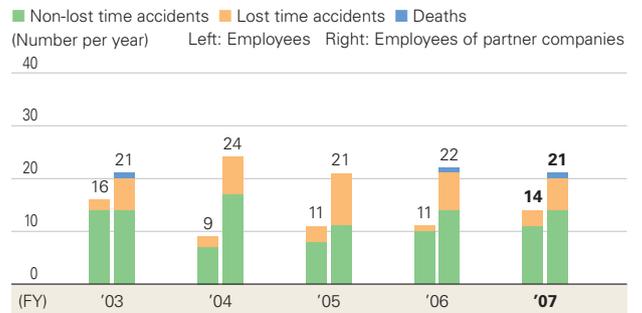
## UBE Group Safety and Health Conference

The UBE Group holds an annual Group Safety and Health Conference where safety awards are presented and employees, including those from partner companies, have an opportunity to increase their awareness of safety issues. The conference also acts as a vehicle to report the results of the previous year's safety score. In addition, the Group endeavors to have participants reaffirm their commitment to eliminating occupational accidents.

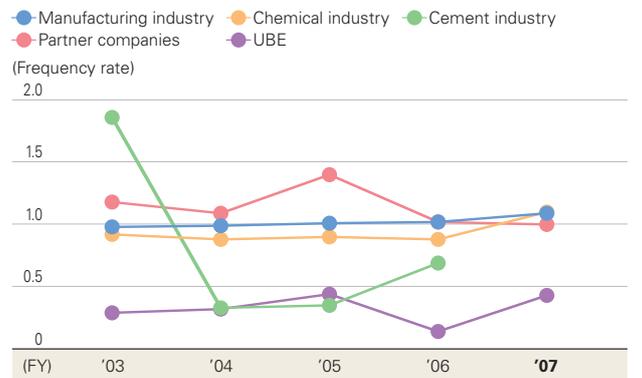


UBE Group Safety and Health Conference

## Number of Occupational Accidents (Involving Employees of UBE and Those from Partner Companies)



## Lost-Time Injury Frequency Rate



\* Data on lost-time industry frequency rates for the manufacturing, chemical, and cement industries is based on statistics supplied by the Ministry of Health, Labour and Welfare  
\* Frequency rate = (Number of lost-time injuries)/(total work hours) x 1,000,000 hours

# Working to Maintain Process Safety and Safe Facility Operations

Based on its principle of "UBE shall regard maintenance of process safety as part of its basic mission as a manufacturer," measures to promote a safety culture are implemented across the UBE Group.

## Prior Safety Assessment of Chemical Substances

Based on procedures designated in the safety assessment standards, we also perform safety assessments of chemical substances that we have developed or plan to start handling. In fiscal 2007, the UBE Group performed 53 chemical substance safety assessments.

## Plant Safety Assessment

The methods stipulated in the Plant Safety Assessment Standards are followed when carrying out pre- and post-plant safety assessments of newly installed, additional, or modified facilities, and when relevant laws and regulations are newly enacted or revised. In fiscal 2007, the UBE Group carried out 49 assessments for new installations and facility modifications.

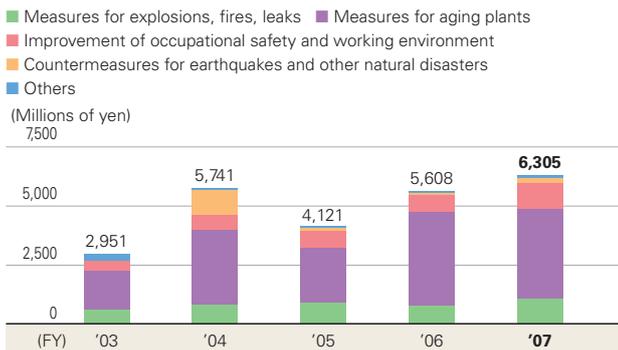
## Emergency Training

Each month a variety of safety-related activities are conducted at the sites of the UBE Group. These include emergency drills, mutual workplace checks by safety supervisors, and mutual safety patrols with partner companies. Training content is also posted on the intranet to widely inform employees of these activities.



Comprehensive disaster prevention drill at the Chiba Petrochemical Factory

## Occupational Safety, Health and Disaster Prevention Expenditure of UBE Group



## High-Pressure Gas Equipment, Boiler, and Class-1 Pressure Vessel Inspector Certification

At our factories where the treatment of high-pressure gas is approved by the Japanese government, and also at our factories equipped with boilers and Class-1 pressure vessels, we promote the acquisition and update of the inspector certification for post-completion/safety inspections based on the High Pressure Gas Safety Law and on the Industrial Safety and Health Act, respectively. We will further improve the safety of these factories by conducting pre-audits and other activities. In fiscal 2007, the Chiba Petrochemical Factory updated its certification. (See page 39 for details.)

## Environment & Safety Qualification

We encourage employees to obtain legal qualifications for the safe operation and management of our workplace.

### Number of Employees with Environment & Safety-Related Qualifications

Unit: Persons

Qualification	UBE Group	UBE
Pollution control manager and chief	561	404
Environmental measurement experts	18	15
Working environment measurement experts	65	55
Health supervisors	353	274
Energy supervisors	293	215
Hazardous materials supervisors	4,846	3,606
Operation chiefs for handling of specified chemical substances	986	632
High-pressure gas production safety officers	1,549	1,317
Boiler technicians	1,301	987

(As of April 2008)

## Message

### To Build a Safety Culture

We obtained OSHMS certification in 2005 and have since been improving our safety management and safety activity levels based on the certified system. All employees, including those from partner companies, are engaged in risk assessment and small-group activities to ensure safety at their workplaces. We have also introduced the STOP system to reduce occupational risks through safety measures, and are promoting communications for safety at our workplaces. Furthermore, we have included measures for elderly workers in our safety measures to provide all employees with safe and comfortable workplaces where they can work with easy minds.



**Hiroyoshi Oba**

Manager of the Environment & Safety Center,  
Ube Machinery Corporation, Ltd.

# Promoting Mutual Understanding with Local Communities through Social Contribution Activities

The UBE Group promotes mutual understanding with local communities at its sites in and outside Japan by supporting a variety of social contribution activities.

## Communication with Local Communities

### Facility Tours

The UBE Group factories and research institutes regularly welcome stakeholders to their facilities, including students from local schools and members of various organizations.

In fiscal 2007, the number of people participating in tours to UBE Group factories in the Ube District reached 5,259, up 300 from the previous year's level. This included students from local elementary, junior, and senior high schools and universities, visitors from overseas, and representatives of governmental agencies and nonprofit organizations.

The factories in the Ube and Chiba Districts also run annual open days for the families of employees, and these have proved highly popular among the families.



Elementary school students visiting UBE i Plaza

### RC Regional Dialogue Meetings (in the Sakai-Senboku and Yamaguchi-Nishi Districts)

The Japan Responsible Care Council (JRCC) holds its Responsible Care (RC) Regional Dialogue meetings mainly in regions where industrial complexes are located. As a member of the Council, UBE participated in the sixth meetings held in the Sakai-Senboku and Yamaguchi-Nishi Districts and gave a presentation on its RC activities at the poster sessions held during the meetings.



RC Regional Dialogue held in the Yamaguchi-Nishi District

### RC Dialogue Meeting in the Ube-Onoda District

UBE and four other companies belonging to the Ube-Onoda Branch of the JRCC jointly held the fifth RC Dialogue meeting in the Ube-Onoda District, in which 20 people representing local neighborhood associations, environmental NGOs, consumer associations, and inhabitants participated. Another 20 individuals representing the local governments and universities also attended the meeting as observers.

After taking a factory tour, participants were divided into two groups according to their interests and capacity, and the groups freely discussed a variety of environmental issues, including odors, water pollution, pollutant release and transfer register (PRTR) for the emissions of hazardous chemical substances and other pollutants, and photochemical smog.



RC Dialogue meeting held in the Ube-Onoda District

### Participation in Local Events

UBE Group sites hold and participate in various local events to promote harmony with local communities. For example, the Ube Chemical Factory held a summer festival named "Chemical Summer Festival" in July 2007, in which as many as 2,000 people participated. In addition, the first Ube Festival was held in the Chiba District in August 2007, with local government officials and members of local boys' baseball teams invited. In the festival, 500 employees of local UBE Group companies participated.



First Ube Festival held in the Chiba District

## Development of Next-Generation Human Resources

### Chemistry Experiment Event for Children

Every year, UBE invites schoolchildren to attend chemistry experiment programs during their summer vacations. The purpose of such activities is to help children experience the fascinating world of chemistry by providing them with easy-to-understand explanations of UBE's advanced technologies.

In 2007, the Research & Development Department of the Specialty Chemicals & Products Company invited children to the 19th Summer Holiday Junior Science Class held in Ube City, in which children participated in an experiment to generate nitrogen gas from plastic. In addition, the Organic Specialty Materials Research Laboratory and the Polyimide Business Unit held the Dream/Chemistry-21 Children's Summer Holiday Chemistry Experiment Show in Tokyo, attracting a great number of children, who enjoyed creating their own original bookmarks using high-performance plastics.



19th Summer Holiday Junior Science Class



Dream/Chemistry-21 Children's Summer Holiday Chemistry Experiment Show

### Open Classes for Senior High School Students

The Japanese Ministry of Education, Culture, Sports, Science and Technology is implementing the Super Science High School (SSH) program, which is designed to use local educational resources to develop scientific and technological human resources who have both scientific ethics and international abilities. Under this program, Ube High School in Yamaguchi Prefecture was designated as an SSH, and UBE, together with Yamaguchi University, has been supporting the school under the program. In fiscal 2007, UBE held two open classes on environmentally conscious R&D for the students of the high school at its research laboratory. In addition, the Company is dispatching lecturers to professional education institutes such as Yamaguchi University and Tokyo University of Science.



Lecture given by the Director of the Inorganic Specialty Product Research Laboratory

### Internships (Training at Factories)

We annually accept some students from specialized vocational high schools, universities, and graduate schools under our internship program.

In August 2007, we accepted 15 students from specialized vocational high schools as trainees. They were divided into three groups, and the groups received training at one of the following three sites for five days: the Ube Chemical Factory, Ube Cement Factory, and the Power Business Unit. We also accepted some graduate students for two weeks in the same month, who received training at five sites, including the Ube Chemical Factory and Ube Cement Factory.

Furthermore, multiple programs are now under way at the Organic Chemistry Research Laboratory through a comprehensive partnership with Yamaguchi University, including an internship program.



Trainees listening to explanations about the cement carrier

### Voluntary Tree and Flower Planting Activities

In December 2007, employees of the UBE Group participated in the third round of the program implemented by Yamaguchi Prefecture to create a riverhead forest in cooperation with local companies. Participants thinned and trimmed cypress trees to maintain the water retention capabilities of the forest, which is located near Lake Ono and which provides the source of local tap water and industrial water.

Meanwhile, employees voluntarily plant flowers within the premises of UBE Group sites as a beautification measure. Of special note, the Ube Chemical Factory won prizes in flowerbed contests held by Ube City in the spring and fall of 2007.



Third round of the program to create a riverhead forest



Flowerbed that won a prize in the spring of 2007

### Tours of Local Industrial Facilities

Our factories in the Ube District participated in a project named CSR Tourism Ube, Mine Sanyo-Onoda for the first time in November 2007.

This project has been conducted by a local council established to promote industrial tourism in the region. In the project, local corporate contributors to the development of local communities and protection of local environments are introduced to participants. In the four tours held in the project, participants visited local industrial facilities, including the UBE Group's factories, and these tours were highly evaluated by the visitors.



Participants visiting a limestone mine at the Isa Cement Factory

### Ube Industries Central Hospital

As a core health facility in the area, Ube Industries Central Hospital provides local citizens with highly advanced emergency medical care for acute diseases 24 hours a day.

Moreover, the Hospital holds health seminars, in which its doctors, nurses, rehabilitation specialists, and national registered dietitians participate as staff, in order to help local inhabitants maintain and promote their health. The Hospital is also engaged in social education activities. For example, it holds special classes for local junior high school students, in which maternity nurses talk to them about the preciousness of life.

The Hospital became the first hospital in Yamaguchi Prefecture to train emergency lifeguards on tracheal intubation as a model for other hospitals, and four guards have already completed the training at the Hospital. They are now working at the forefront of emergency care, using what they have learned in the training.

### Support of Culture and Art

#### Exhibition of Photos Taken by Children

An exhibition of photos taken by children living in Yamaguchi Prefecture was held in March 2007, and UBE gave a special prize to one of the photos selected as a winner.

#### UBE Biennale '07

UBE Biennale is a biennial sculpture competition that began in 1965 and has the third-longest history of its kind in the world. UBE grants the Ube Industries, Ltd. Prize and gives financial support for the purchase of prize winning works. In 2007, the 22nd UBE Biennale was held with the participation of 138 artists from 35 countries. Mr. Hidenori Oi won the Ube Industries, Ltd. Prize for his work titled "Gravitation - Juryoku."

### The UBE Foundation

The UBE Foundation was established in 1959 as the Watanabe Memorial Science Foundation at the bequest of the late Takaji Watanabe, the founding chairman of UBE. The Watanabe Memorial Science Foundation was renamed the UBE Foundation in 1998 as part of celebrations to mark the 100th anniversary of the Company. The Foundation aims to promote academic research activities and improve research facilities in Japan, thereby assisting academic researchers in their activities and contributing to the future development of academic culture.

The Foundation has been awarding research grants on an annual basis, and in fiscal 2007, the 48th round of grants were bestowed on five researchers, as shown below. In 2009, we plan to add a special prize to the grant program in celebration of its 50th anniversary.

#### Ube Foundation Grant Recipients

Name	Position held	Research theme
Seiichi Oyadomari	Professor, Institute for Genome Research, The University of Tokushima	Elucidation of the metabolic control mechanism of mammalian endoplasmic reticulum (ER) stress response pathways
Shinichi Saito	Associate Professor, Faculty of Science, Tokyo University of Science	Efficient synthesis of interlocked compounds using catalytic reaction
Mitsuru Higa	Professor, Graduate School of Science and Engineering, Yamaguchi University	Development of an osmotic pressure power generation system that uses an ion-barrier laminate charged membrane
Yuji Owada	Professor, Graduate School of Medicine, Yamaguchi University	Analysis of the function control mechanism of FABP molecules in the nerve system—toward the elucidation of the pathological conditions of schizophrenia

#### Recipient of the Watanabe Memorial Special Grant

Name	Position held	Research theme
Toshihiro Kushibiki	Specially designated lecturer, Graduate School of Engineering, Osaka University	Research into cell function control by linking medicine with engineering—stem cell differentiation control by the use of photon technology

### Watanabe Memorial Culture Association

Established in 1936 at the bequest of the late Sukesaku Watanabe, the founder of UBE, and funded by his private money, the Watanabe Memorial Culture Association supports the organization of cultural and art-related activities in Ube City, such as lectures and musical concerts.

In 2005, the Association launched a program to lend picture books to local kindergartens and childcare centers by establishing the Watanabe Memorial Culture Association Picture Book Collection within the Ube City Library. Subsequently, in 2006, it donated about 2,000 books, mainly in the field of art, (Watanabe Memorial Book Collection) to the Ube City Library to celebrate its 70th anniversary. The Association annually provides donations to both the Watanabe Memorial Book Collection and the Picture Book Collection.

## Activities in Thailand

The Thai UBE Group is promoting communication with local residents through multiple activities, based on the idea that the UBE Group is a part of the community.

### Organization of a One-Day Summer Program

As in 2006, we held a one-day summer program for 8- to 12-year old children living near our local manufacturing facilities. Employees of the UBE Group and local university students participated as instructors in the camp, which was held during the summer vacation, just prior to the start of the new semester.



Participants in the one-day summer program

### Organization of a Camp for the Protection of the Environment

In October 2007, we held another camp for teenagers in Rayong, on the theme of protecting the local nature. Participants cleaned up the Khao Laem Ya National Park, enjoyed walking in the park, and learned about trees and wild birds by keeping a record of their observations.



Participants learning at the camp

### Cleaning up the Beach

In September 2007, the Chopper Club, a club of bikers who work for the UBE Group, led an activity to clean up the Mae Ram Phun Beach, in which some 70 people participated, including local UBE Group employees, students, and governmental officials. They collected about 200 kg of waste in total.



Participants in the cleanup activity

### Chemical Engineer Training Project

In March 2008, we donated money to launch a chemical engineer training project jointly with Mabtaput Technical College.



Donation to the project

### Organization of a Local Event on Children's Day in Thailand

In January 2008, we held an event for Children's Day in Thailand in a village near our local manufacturing facilities. A total of 100 children participated in the event, and they had a good time playing a game using balloons and watching a dance show.



Participants in the event

### Activities in Spain

The UBE Group has three companies in Spain: Ube Corporation Europe, S.A.; Ube Chemical Europe, S.A.; and Ube Engineering Plastics, S.A. These three companies jointly provide continuous support to the Red Cross, UNICEF, the Spanish Cancer Association, and several nongovernmental organizations engaged in social welfare activities in addition to local festivals and memorial events.

#### Exchanges with a Local University

In Spain, we are promoting exchanges with the local Jaume I University. In 2007, we received 15 students from the university as trainees. The students in the master course learned about international finance, data computing, and roles to be played by chemists in today's companies by attending seminars given by local UBE staff.

We also gave financial support for research conducted at the university on energy conservation and sustainability of industrial machines and facilities, and invited 50 students studying chemistry there to our manufacturing facilities, where the students observed firsthand how materials were tested, inspections were conducted, and maintenance operations were performed.

#### Support for Sports Activities

We also actively participate in local sports activities and provide support to a range of local sports teams and clubs, including the Playas de Castellón football team, L'illa-Grau volleyball team, and a track club called Costa de Azahar.



Local futsal team, UBE-Almazora

#### Factory Tours

We held the tours of our manufacturing facilities for local inhabitants and economic leaders as a means to actively disclose information about our local business activities. Participants in the tours, including local schoolteachers, PTA representatives, journalists from local economic newspapers, and some board members of the Valencia branch of an association of entrepreneurs in Spain, visited the facilities and listened to detailed explanations there.



Science teachers visiting the nylon resin factory

### Activities in Canada

UBE Automotive North America Sarnia Plant, Inc., which is UBE's production base for aluminum wheels in Canada, is engaged in a variety of activities as a member of the local Chemical Valley Emergency Coordinating Organization. The organization, comprising those in charge of disaster management for the city of Sarnia and local industries, formulates emergency plans to minimize any potential risks that might cause harm to local communities.

UBE Automotive North America Sarnia Plant, Inc. (UBE Sarnia) and its members support local orphans and people with disabilities by giving donations to local charity activities, including United Way activities. In 2007, in recognition of its contribution to local activities conducted to promote sound judgment among companies, they received a letter of thanks from the Sarnia Lambton Worker Development Committee. In addition, in appreciation for its continuous health promotion activities at its workplaces, the company received a prize for the provision of healthy workplaces from the Regional Health Service Department.



Certificate of commendation for the provision of healthy workplaces

# Initiatives for Environment and Safety



**At the UBE Group, conserving the environment and protecting health and safety come first in its business operations. This is to provide products and services that make people's lives better and to achieve solid and sustainable growth.**

## **Environmental and Safety Principles** Revised in July 2005

As members of society, corporations must be fully conscious of their responsibilities regarding their contributions to society, environmental preservation and the maintenance of health and safety in performing their corporate activities.

As the core company in managing the consolidated UBE Group, UBE shall pursue the following vision in order to perform its leadership role, and shall work to improve the quality of the environment and safety among all of its Group companies through publication of performance reports and dialogue with society.

### **Operational Safety**

Ensuring operational safety shall be the priority in all areas and activities under UBE's commitment to respect human life.

### **Process Safety**

UBE shall regard maintenance of process safety as part of its basic mission as a manufacturer.

### **Environmental Preservation**

As a responsible corporate citizen, UBE shall act positively to protect and improve both community and regional conditions and work for the preservation of the global environment.

### **Product Safety**

The UBE Group shall pursue its corporate responsibility in providing its customers and the public with safe and reliable products.

### **Health Management**

UBE recognizes that maintaining and promoting the health of its employees is the basis of corporate and social vitality.

President & Representative Director,  
and Group CEO  
Ube Industries, Ltd.  
Hiroaki Tamura

From left to right:  
Facility inspection in Thailand  
Samet Island near UBE's factory in Thailand  
Fire drill at Sakai Factory  
Environment and safety inspection at Isa Cement Factory

# Protecting Environment, Health, and Safety for Employees and Local Communities through Top-Down Management

The UBE Group has been carrying out responsible care (RC)\*1 activities across its business fields, ranging from the Chemical segment, the Cement & Construction Materials segment, and the Machinery & Metal Products segment to the Energy and Environment segment.

## Environment and Safety Promotion System

The UBE Group has established the Group Environment and Safety Committee and the Group Product Liability and Quality Committee as the supreme decision-making organizational units to promote "Environmental and Safety Principles." These committees—which consist of the members of the Group Strategic Management Committee and are chaired by the CEO—determine and review the Group-level policies and measures relating to the environment, safety, health, and product safety.

Each of these two decision-making units has five subordinate committees of the same name for segments involved in promoting measures for the environment, safety, and product safety in

their business segments, according to the policies and measures determined by the Group committees. Besides such segment subcommittees, the Group Environment and Safety Committee has individual subcommittees with responsibility for five specific areas, which discuss and review concrete action plans and prepare various related reports.

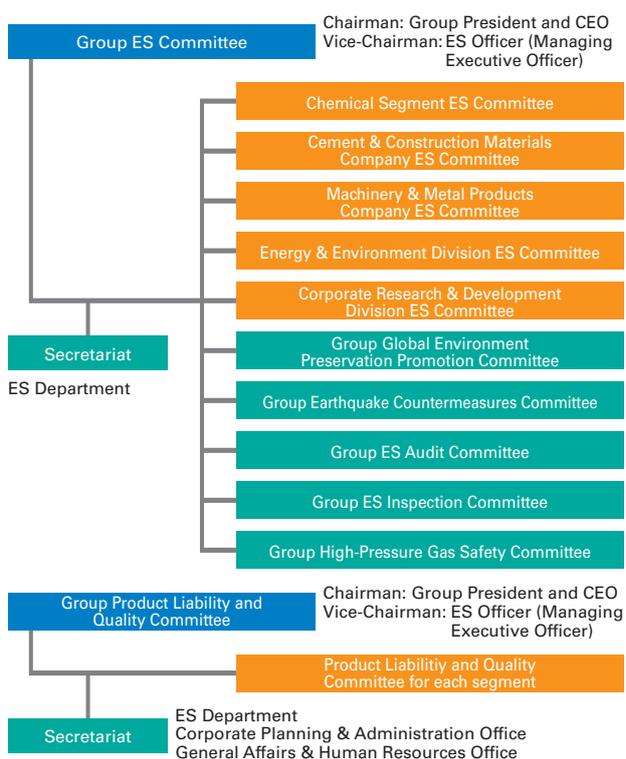
## Responsible Care Management System

A Plan-Do-Check-Action (PDCA) management cycle has been developed to promote continuous improvements (spiral-up).

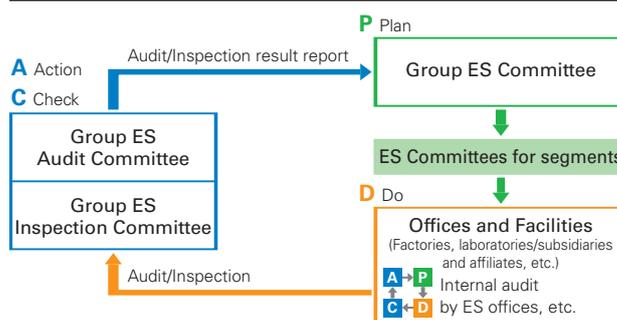
At the UBE Group, major Group companies represent group-level committees. These key Group companies are also subject to environment and safety audits and inspections. Each UBE office or facility undergoes environment and safety audits every year, while UBE Group companies are audited every two years. Environment and safety inspections are also conducted by senior management. Audits and inspections may result in the issuance of directives requiring remedial action. Findings are reported to the Group Environment and Safety Committee and the segment Environment and Safety Committees.

Quality and product safety audits are performed on products in a similar manner. Findings of these audits are reported to the Group Product Liability and Quality Committee.

## Organization of Environment and Safety (ES) Committee



## PDCA Management Cycle



## Glossary

\*1 RC (responsible care): RC is a set of voluntary initiatives based on the principles of autonomous decision-making and self-responsibility. Under RC, corporations that manufacture and/or handle chemical substances work voluntarily to preserve "health, safety and the environment" throughout product lifecycles, from the development of chemicals through their manufacture, distribution, use and final consumption to disposal. These commitments must be clearly reflected in the corporations' management policies. RC began in Canada in 1985, and it is now active in 53 countries/regions around the world (as of March 2008). The International Council of Chemical Associations (ICCA), established in 1990, manages RC at the global level. The Japan Responsible Care Council (JRCC), established in 1995 as a part of the Japan Chemical Industries Association and consisting of 101 member companies (as of April 2008), manages RC in Japan.

## ISO Certification and Certified Sites

The UBE Group is actively implementing measures to acquire ISO 14001, 9000-series, and OSHMS certification, which are respective international standards for environmental management system (EMS), quality management system (QMS), and occupational

safety and health management system (OSHMS). All the operating sites of UBE have already acquired certification for these three management systems.

In addition, we have received certification for the inspection of high-pressure gas equipment and boilers, so we have been independently checking their safety on an ongoing basis.

### Certification Acquired and the Year Awarded

Name of Company	EMS	QMS	OSHMS	Name of Company	EMS	QMS	OSHMS
Chiba Petrochemical Factory, Ube Industries, Ltd.	1999	1995	2006	Ube Film, Ltd.	2004	2006	*
Sakai Factory, Ube Industries, Ltd.	2000	1996	2005	Ube Chemical Europe, S.A. (Spain)	*	1999	*
Ube Chemical Factory, Ube Industries, Ltd.	2000	1994	2006	Ube Engineering Plastics, S.A. (Spain)	*	2005	*
Nishioki Factory, Ube Industries, Ltd.	2001	2000	2005	Ems-Ube, Ltd.	2000	1994	2006
Ube Cement Factory, Ube Industries, Ltd.	1999	1997	2005	UBE-MC Hydrogen Peroxide, Ltd.	2003	2001	2007
Kanda Cement Factory, Ube Industries, Ltd.	1999	1996	2005	Ube-Nitto Kasei Co., Ltd.	2001	1997	2006
Isa Cement Factory, Ube Industries, Ltd.	1999	1995	2005	Ube Material Industries, Ltd.	2004	2001	2007
Organic Chemistry Research Laboratory, Ube Industries, Ltd.	1999	/	2007	Ube Board Co., Ltd.	2006	2003	2008
Organic Specialty Materials Research Laboratory, Ube Industries, Ltd.	1999	/	2007	Hagimori Industries, Ltd.	2004	2002	2005
Okinoyama Coal Center, Ube Industries, Ltd.	2000	/	2007	Ube Shipping & Logistics, Ltd.	2000 (ISM)	2000	2000 (ISM)
Power generation facilities of Ube Industries, Ltd.	2000	/	2006	Yamaishi Metal Co., Ltd.	*	2000	2006
Ube Aluminum Wheel Factory, Ube Industries, Ltd.	2000	1998	2005	Ube-Mitsubishi Cement Research Institute Corporation	1999	/	2007
UMG ABS, Ltd.	2000	1992	2003	UBE Scientific Analysis Laboratory, Inc.	1999	2001	2007
Ube Ammonia Industry, Ltd.	2001	2002	2004	T&U Electronics Co., Ltd.	2001	2004	2006
Ube Maintenance Co., Ltd.	2000	2005	2006	Ube Steel Co., Ltd.	2005	1999	2007
Ube Electronics, Ltd.	2005	2000	*	Fukushima, Ltd.	1998	1997	2000
Thai Caprolactam Public Co., Ltd. (Thailand)	2002	2002	2002	Ube Techno Eng. Co., Ltd.	2008	2002	2007
Thai Synthetic Rubbers Co., Ltd. (Thailand)	2000	2002	2002	Ube Machinery Corporation, Ltd.	1999	1996	2005
Ube Nylon (Thailand), Ltd. (Thailand)	2004	2003	2006	Ube Automotive North America Sarnia Plant, Inc. (Canada)	2003	2002	*
Ube Agri-Materials, Ltd.	2006	/	*				
Meiwa Plastic Industries, Ltd.	2002	1999	2007				

• An asterisk mark (\*) indicates sites currently examining the acquisition of certification. A slash mark (/) indicates that the site does not have any systems for which the certification is applicable.

• For Group companies that have several factories, the earliest year in which any of the factories acquired the certification is shown.

### High-Pressure Gas Equipment Inspector Certification (for Safety/Post-Completion Inspections)

Type of Certification	Certified Factories	Year of Certification
High-pressure gas equipment inspector certification (for safety/post-completion inspections) (High Pressure Gas Safety Law)	Sakai Factory	1999
	Nishioki Factory	2001
	Chiba Petrochemical Factory	2003
Certification as boiler and Class-1 pressure vessel inspectors (for inspections to be conducted while boilers and pressure vessels are in operation) (Industrial Safety and Health Act)	Chiba Petrochemical Factory	1997
	Nishioki Factory	1997
	Sakai Factory	1998

High-pressure gas post-completion inspectors are certified by the Minister of Economy, Trade and Industry to conduct inspections on high-pressure gas equipment following the completion of modification work (post-completion inspections), which should, in principle, be conducted by prefectural governors.

High-pressure gas safety inspectors are those who are certified by the Minister of Economy, Trade and Industry to conduct safety inspections on high-pressure gas equipment, which should, in principle, be conducted by prefectural governors.

Inspectors of boilers and Class-1 pressure vessels are certified by the heads of local labor standards supervision offices to conduct performance inspections without suspending the operation of the boilers and vessels.

### Outline of RC Activities

The UBE Group establishes targets and plans each year to promote RC activities in line with its Responsible Care Code.

At the end of each fiscal year, the Group conducts a self-evaluation, the results of which are reflected in RC activities in the subsequent fiscal year. In this manner, the Group makes continuous efforts to improve its RC activities.

Responsible Care Code	Targets for Fiscal 2007	Planning and Policy in Fiscal 2007
Common Items	<ul style="list-style-type: none"> <li>● Medium-Term RC policy (Fiscal 2007-2009) "Upgrading RC quality"</li> </ul>	<ul style="list-style-type: none"> <li>● Medium-Term RC target (Fiscal 2007-2009)                             <ol style="list-style-type: none"> <li>1. Improve management systems and raise RC awareness</li> <li>2. Improve the quality of occupational safety and health, process safety and disaster prevention, environmental preservation, product safety, and distribution safety in a sustainable manner</li> <li>3. Ensure compliance with laws, regulations, and other rules</li> <li>4. Disclose performance and conduct dialogues with society</li> <li>5. Fulfill corporate social responsibilities and increase corporate value through implementing the preceding items 1 to 4</li> </ol> </li> </ul>
Management Systems		<ol style="list-style-type: none"> <li>1. Promote compliance activities</li> <li>2. Improve high-pressure gas safety promotion systems</li> <li>3. Develop and revise rules and standards</li> <li>4. Provide corporate accident data on internal intranet</li> <li>5. Continue/implement environment and safety audits in Japan</li> <li>6. Implement quality and product safety audits</li> </ol>
Environmental Preservation	<ul style="list-style-type: none"> <li>● Reduce output of substances that negatively impact the environment</li> </ul>	<ol style="list-style-type: none"> <li>1. Promote global warming prevention measures</li> <li>2. Further improve environmental performance</li> <li>3. Reduce environmental complaints</li> </ol>
Process Safety and Disaster Prevention	<ul style="list-style-type: none"> <li>● Eliminate facility accidents</li> </ul>	<ol style="list-style-type: none"> <li>1. Ensure the operation of a PDCA cycle in maintenance management</li> <li>2. Improve group-wide earthquake preparedness and response</li> </ol>
Occupational Safety and Health	<ul style="list-style-type: none"> <li>● Reduce industrial accidents</li> </ul>	Health management: <ol style="list-style-type: none"> <li>1. Develop comfortable working environments</li> <li>2. Upgrade employee wellness programs</li> </ol> Occupational safety: <ol style="list-style-type: none"> <li>1. Improve safety activities based on OSHMS</li> <li>2. Carry out collective safety management activities with partner companies</li> <li>3. Enhance communication in the workplace</li> <li>4. Promote safety management measures for elderly employees</li> </ol>
Distribution Safety	<ul style="list-style-type: none"> <li>● Continued revision of "container yellow cards" to comply with GHS label requirements</li> </ul>	<ol style="list-style-type: none"> <li>1. Update the Distribution Safety Management Guidelines</li> <li>2. Measures to prevent distribution-related complaints and improve distribution quality</li> </ol>
Chemicals and Product Safety	<ul style="list-style-type: none"> <li>● Improve chemical safety management and preclude quality-related complaints</li> </ul>	<ol style="list-style-type: none"> <li>1. Implement preparatory measures to comply with the EU's REACH regulation</li> <li>2. Revise GHS MSDS and labels systematically</li> <li>3. Continue measures to deal with toxic substances contained in products (RoHS Directives, green procurement)</li> <li>4. Reinforce management of failure costs</li> </ol>
Dialogue with Communities	<ul style="list-style-type: none"> <li>● Promote dialogue with communities</li> <li>● Information disclosure and improvement of transparency</li> </ul>	<ol style="list-style-type: none"> <li>1. Continue implementation of RC dialogue</li> <li>2. Fulfill CSR Report</li> <li>3. Interact with local communities and organize factory tours on an ongoing basis</li> <li>4. Conduct dialogues with employees to ensure their deeper understanding of CSR reports</li> </ol>



Achieved



Largely achieved



Yet to be achieved

Fiscal 2007 Activity Report		Evaluation	Pages Included
1.	Promotion of compliance through environment and safety audits.		38
2.	Implementation of audits at Chiba Petrochemical Factory and Sakai Factory.		31
3.	Revision/formulation of relevant internal rules to address regulatory changes, as necessary.		
4.	Addition and expansion of occupational accident information. Information on safety of chemical products increased to expand/enhance links to external information.		
5.	Implementation of environment and safety audits at 12 facilities/departments and six Group companies in Japan.		38
6.	Implementation of quality/product safety audits at seven facilities/departments and four Group companies in Japan.		38
1-1.	Holding the Global Environment preservation Promotion Committee meeting (December) to promote the PDCA cycle and to share accurate updates of Japan's and other countries' developments.		44
1-2.	Achievement of reduction of 2007 CO <sub>2</sub> emission by the UBE Group by about 9% compared with the 1990 level.		44
1-3.	Achievement of an annual 100,000-ton (CO <sub>2</sub> equivalent) reduction of the Group's non-CO <sub>2</sub> greenhouse gas emissions earlier than scheduled.		44
2-1.	Emissions of 12 voluntarily selected chemical substances: reduced by 49% (compared with the 2000 level).		46
2-2.	Final waste disposal by external sectors: reduced by 69% (compared with the 2000 level).		49
3-1.	Monitoring of odors and noise by governmental agencies, corporate and civic neighbors, and employees. Operation of the odor monitoring system.		
1.	Review the state of full facility inspections during environment and safety audits. No significant facility-related accidents took place.		31
2-1.	Revision of the Group's disaster management manual.		21
2-2.	Introduction of a safety confirmation system for disasters (Chiba Petrochemical Factory, Osaka Branch, Sakai Factory, and Organic Specialty Materials Research Laboratory).		21
2-3.	Introduction of an earthquake warning system (Chiba Petrochemical Factory).		21
1.	Activities performed with regard to the Meet and Greet Campaign, segregation of smoking areas and encouragement of no smoking, use of health checkup results, mental health management programs, and programs to improve dietary behavior and encourage regular exercise.		29
1-1.	New certifications acquired by five Group companies/facilities.		39
1-2.	Implementation of internal auditor training seminar.		27
2.	Enhancement of the roles of the safety committees in respective offices and factories and provision of guidance for affiliate companies.		30
3.	Holding OSHMS-themed special seminars and dialogue meetings with external lecturers focusing on the elements of risk assessment.		30
4.	Announcement of activity performance and encouragement of further implementation during environment and safety audits.		30
1.	Completion of the procedures for the substances subject to the Industrial Safety and Health Law.		25
2.	Measures taken to prevent distribution-related complaints and enhance distribution quality.		25
1.	Launch of the REACH Promotion Office.		24
2.	Revision of labels requiring an urgent response was completed within the specified period.		24
3.	Completion, through quality audits, of rectifying measures pertaining to the RoHS Directives. Systematic response to questionnaire surveys on green procurement.		25
4.	Assessment of the present level through audits. Improvement of the group-wide system to minimize failure costs.		25
1.	Holding of fifth Ube/Onoda Community RC Dialogue Meeting.		32
2.	Participation in the RC Regional Dialogue conferences in the Yamaguchi-Nishi District and the Sakai-Senboku District.		32
3.	Organization of internal meetings to explain CSR Report (Chiba, Tokyo, Sakai and Ube).		
4.	Receipt of third-party verification of CSR Report 2007.		

## Environmental Accounting

Since fiscal 1999, the UBE Group has introduced environmental accounting as a tool for quantitatively understanding and evaluating the costs and effects of environmental preservation in Group business activities and promoting more efficient sustained environmental preservation.

The results for fiscal 2007 are as shown in the following tables.

### Environmental Preservation Costs

Capital investment decreased by ¥1,090 million compared with the fiscal 2006 level, to ¥2,260 million. The main reason behind the decrease was that capital investment related to waste recycling has run its course.

Costs increased by ¥780 million over fiscal 2006, to ¥9,920 million, chiefly due to an increase in resource recycling costs pertaining to operation of a power generation facility that converts biomass into fuel, in which investment was made in fiscal 2006, as well as an increase in pollution prevention costs.

### Economic Effect

The income effect amounted to ¥710 million. This figure includes proceeds from the sale of marketable waste.

The saving effect was ¥8,230 million. Contributing factors included resource recycling and efforts to promote energy conservation.

### Environmental Preservation Cost

(Unit: ¥100 million)

Category	Main Activity	Capital Investment			Cost		
		FY2006	FY2007	Difference	FY2006	FY2007	Difference
Cost by business area	Pollution prevention	8.1	10.1	2.0	49.8	52.4	2.6
	Global environment preservation	5.7	3.3	-2.4	1.9	3.3	1.4
	Resource recycling	18.9	8.4	-10.5	20.4	24.0	3.6
Upstream/downstream costs	Costs of container/packaging recycling, green purchasing	0.0	0.0	0.0	6.4	5.7	-0.7
Costs of management activities	Costs of acquiring, running and maintaining environmental management systems	0.0	0.0	0.0	4.4	4.4	0.0
Research and development costs	R & D costs of environment-friendly products and technologies	0.7	0.6	-0.1	3.3	4.5	1.2
Costs of social activities	Costs of greening and beautifying offices/facilities and their surroundings	0.1	0.2	0.1	2.5	2.2	-0.3
Costs of cleaning up environmental damage	Payment of environment-related levy	0.0	0.0	0.0	2.7	2.7	0.0
Total		33.5	22.6	-10.9	91.4	99.2	7.8

### Economic Effect

(Unit: ¥100 million)

Category	Main Activity	FY2006	FY2007	Difference
Income effect	Revenues from acceptance of industrial waste* Proceeds from sales of marketable waste products	5.5 (93.2)	7.1 (101.8)	1.6 (8.6)
Saving effect	Savings achieved through resource recycling and energy conservation	64.0	82.3	18.3

\*Sales by resource recycling businesses (revenues from the acceptance of industrial waste as fuel and raw materials for cement production), which were integrated in the business line in fiscal 2005, are excluded. Figures in parentheses represent the total if these are included.

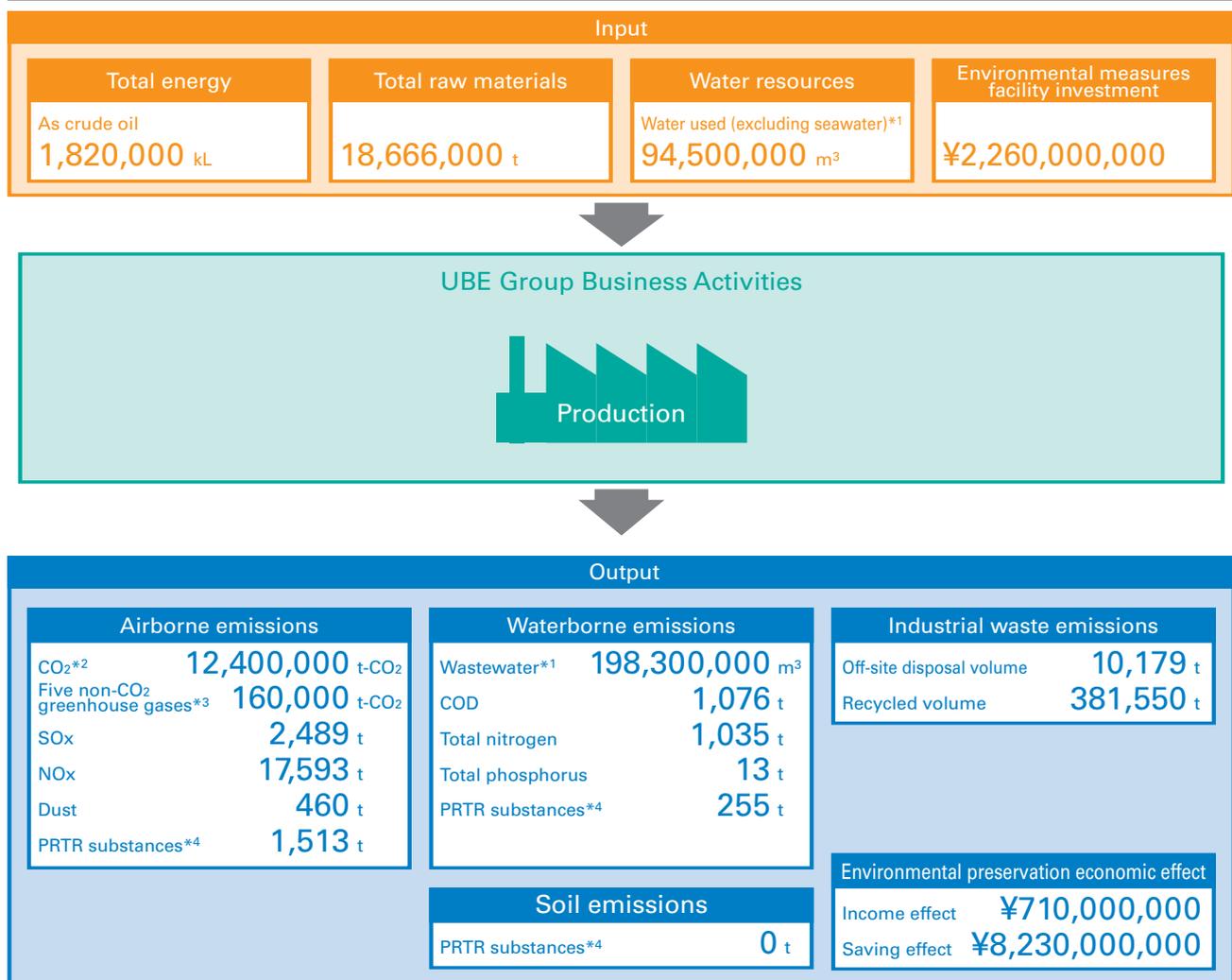
### UBE Group Environmental Accounting Method

- Companies covered: UBE Group companies (Only consolidated subsidiaries from "Companies covered" on page 3).
- Calculations are based on Environmental Accounting Guidelines (Ministry of the Environment FY 2005 version).
- The economic effect is the effect obtained in fiscal 2007 as a result of environmental protection activities. This is limited to what can be calculated rationally, and excludes hypothetical calculations such as the avoidance of the cost of cleaning up environmental damage.
- Internal transactions within the UBE Group are set off and eliminated.

## Environmental Performance

The UBE Group recognizes that environmentally oriented business practices are vital for its continuous growth. We will continue to promote measures to prevent global warming, reduce emissions of toxic chemical substances and industrial waste, and use waste and resources effectively in order to continuously foster business activities that contribute to the formation of a recycling-based society.

### Overview of UBE Group Environmental Impacts in Fiscal 2007



See "Companies covered" on page 3 for details on the scope of UBE Group performance data.

\*1 The difference between the water used and wastewater is because wastewater included seawater.

\*2 Indicates total CO<sub>2</sub> emissions

\*3 CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, and SF<sub>6</sub>

\*4 PRTR figures are based on 480 substances designated by the Japan Chemical Industry Association (JCIA). (See page 47 for reference.)

# Achieving Significant Reduction of CO<sub>2</sub> Emissions by Promoting Energy-Saving Activities and Fuel Conversion

During fiscal 2007, the UBE Group reduced its CO<sub>2</sub> emissions by about 9% from the fiscal 1990 level.

We will make further efforts to achieve even greater reductions to achieve the targets stipulated in the medium-term management plan.

## Medium-Term Management Plan (UBE Group Comprehensive Targets)

- 1) CO<sub>2</sub> emissions reduction target to be achieved by introduction of the energy-saving measures, fuel conversion and waste utilization policies in fiscal 2010 set at 12% (compared with the fiscal 1990 level).
- 2) Reduction of emissions of greenhouse gases other than CO<sub>2</sub> of 100,000 tons (CO<sub>2</sub> equivalent) annually by fiscal 2010.
- 3) The above two targets are to be achieved within fiscal 2009, which is earlier than scheduled.

## Reduction of Greenhouse Gas Emissions

Since fiscal 2001, the UBE Group has aimed at a 6% reduction of CO<sub>2</sub> emissions over the 1990 level and followed up the progress of related efforts under the leadership of the Group Global Environment Preservation Promotion Committee. From fiscal 2007, we have been working to achieve an even more ambitious goal of a 12% reduction. We have also been striving to reduce non-CO<sub>2</sub> greenhouse gases toward achieving targets specified in our present medium-term management plan.

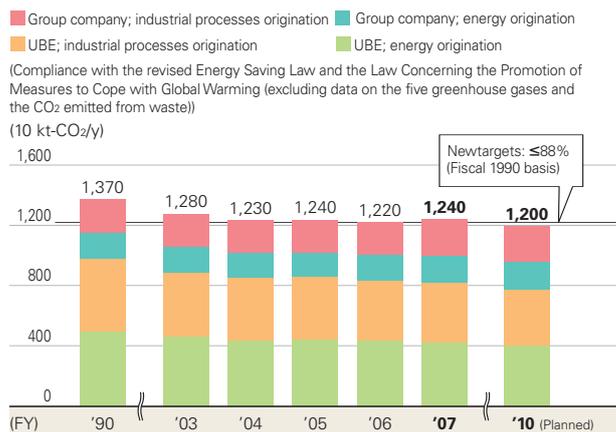
## Targets Stipulated in the Voluntary Action Plans of Segments and Industrial Fields

- Target for Chemicals/Japan Chemical Industry Association  
20% reduction in Unit Energy Consumption (1990 basis, 2008-2012 Target)
- Target for Cement & Construction Materials/Japan Cement Association  
3.8% reduction in Unit Energy Consumption (1990 basis, 2008-2012 Target)
- Target for Machinery & Metal Products/Japan Industrial Machine Association  
12.2% reduction in CO<sub>2</sub> emissions during manufacturing processes (1997 basis, 2008-2012 Target)

## CO<sub>2</sub> Emissions and Energy Consumption

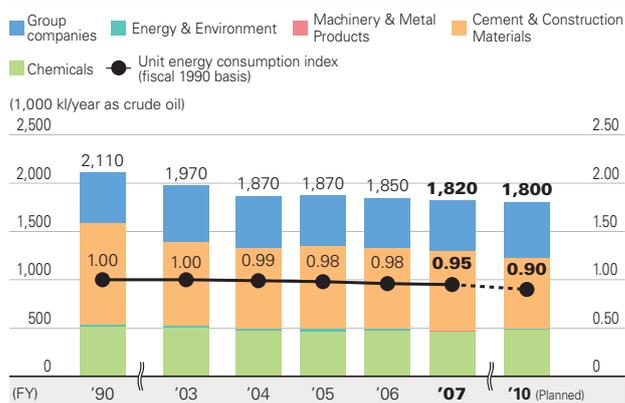
During fiscal 2007, the Group's CO<sub>2</sub> emissions were reduced by about 9% from the 1990 level, although this reflects a slight increase from the fiscal 2006 level. This y-o-y increase is mainly due to production increases at some chemical and construction material factories. We will continue taking CO<sub>2</sub> reduction measures in such a way as to accommodate future business activities and changes in external factors. These efforts will focus primarily on energy-saving initiatives.

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



\* From fiscal 2007, emissions are presented in 10,000 tons of CO<sub>2</sub> (10 kt-CO<sub>2</sub>), rather than the previous 1,000 tons of CO<sub>2</sub> (kt-CO<sub>2</sub>). In addition, the UBE Group's organizational boundaries have been defined in accordance with the Guidelines for Calculating Greenhouse Gas Emissions by Businesses (Ministry of the Environment, Draft Version 1.6) from fiscal 2004 onward. The Nishioki Factory, Ube Agri-Materials, Ltd., Ems-Ube, Ltd., and Kemira-Ube, Ltd. were excluded, while Ube-Nitto Kasei Co., Ltd. was newly included.

## Energy Consumption and Unit Energy Consumption Index



## Reduction of Non-CO<sub>2</sub> Greenhouse Gases

The UBE Group began monitoring its non-CO<sub>2</sub> greenhouse gas emissions in fiscal 2004. N<sub>2</sub>O is the primary subject. Our medium-term management plan titled "Stage Up 2009" calls for annual reduction of 100,000 tons (CO<sub>2</sub> equivalent) of non-CO<sub>2</sub> greenhouse gas emissions by fiscal 2010. We successfully achieved this target earlier than scheduled in fiscal 2007, thanks to the N<sub>2</sub>O catalytic decomposition equipment that we installed at the nitrate acid plant in the Ube Chemical Factory during the year.

## Reduction of Factory-Level Greenhouse Gases in Japan and Abroad

From fiscal 2006, we use wood biomass as a boiler fuel at the Isa Cement factory and the 216 MW pulverized coal thermal power station (IPP), which contribute to the reduction of CO<sub>2</sub> emissions by about 160,000 tons annually. Shift of fuel for boilers at the Sakai Factory from crude oil to less carbon intensive natural gas has also led to the reduction of CO<sub>2</sub> emissions by about 80,000 tons annually. Furthermore, collected waste plastic is now used to fuel cement kilns, which saves the use of new fossil fuel and reduces CO<sub>2</sub> emissions by about 200,000 tons annually.

Aggregating the aforementioned 100,000-ton reduction of N<sub>2</sub>O emissions at the nitrate acid plant and the reduction from the initiatives above, our annual CO<sub>2</sub> reduction tops 500,000 tons. Adding the reduction through our CDM project in Thailand (see p.10-13) (initial operation is scheduled for 2009), the total CO<sub>2</sub> reduction level of the UBE Group's sites in Japan and elsewhere in the world during fiscal 2009 is expected to reach some 700,000 tons.

## Efforts in Logistics

In fiscal 2007, UBE's total transports and CO<sub>2</sub> emissions showed slight increases from the previous year due to increased transports via smaller-size vessels (limestone carriers and tank barges). We are working to improve the efficiency of sales and logistics through a variety of measures, such as consolidated transport, modal shift, and optimal assignment of stock points. The Logistic Re-engineering Project launched in fiscal 2007 leads these initiatives.

## No-Car Campaign

Through the No-Car Campaign started in fiscal 2006, the Group reduced CO<sub>2</sub> emissions by about 180 tons during fiscal 2007. All our offices and factories are continuing this down-to-earth activity.

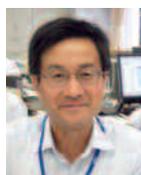
### No-Car Campaign Results for Fiscal 2007

Rank	Name of facility	CO <sub>2</sub> reduction volume (kg)	No. of times held	No. of participants
1	Ube Chemical Factory	62,787	45,637	2,525
2	Sakai Factory	47,810	15,041	983
3	Ube Steel Co., Ltd.	25,631	18,597	852
4	UBE Head Office	11,288	6,349	403
5	Meiwa Plastic Industries, Ltd.	9,154	5,906	170
6	Ube Material Industries, Ltd.	4,729	3,897	213
7	Ube Machinery Corporation, Ltd.	4,713	3,156	100
8	Ube Agri-Materials, Ltd.	4,588	3,711	175
9	Chiba Petrochemical Factory	2,502	1,104	58
10	Organic Specialty Materials Research Laboratory	2,302	686	34
11	Kanda Cement Factory	2,035	1,833	55
12	Ube Cement Factory	2,028	1,649	94
13	T&U Electronics Co., Ltd.	1,040	982	29
14	Nagoya Ammonia Center	624	194	10
15	Isa Cement Factory	264	660	51
	Total	181,495	109,402	5,752

## Message

### Pursuit of Further Logistics Efficiency

The Logistic Re-engineering Project aims to achieve total optimality of our logistics practice by discussing related issues for the entire Group and intensifying collaboration with production, sales and other relevant divisions. Increasing the energy efficiency of, improving the quality of, and streamlining of the distribution process are synonymous, not conflicting, goals. We believe it is our logistics staff's mission to achieve a distribution process that is environmentally friendly, meets needs, and is operated at optimal costs that satisfy both the local community and shareholders.



**Etsuo Matsunaga**

General Manager of Logistic Department and  
Leader of the Logistic Re-engineering Project  
Procurement & Logistics Division

# Implementing Appropriate Chemical Management and Voluntary Emission Reduction of Toxic Chemical Substances

The UBE Group manages the transfer and emission of chemical substances appropriately and engages actively in the prevention of environmental contamination.

In the current medium-term management plan, we have announced targets toward the reduction of emissions of voluntarily selected toxic substances.

## Medium-Term Management Plan (Reduction of Emissions of Chemical Substances)

The total emissions of 12 voluntarily selected chemical substances are to be reduced by 60% in fiscal 2009, compared with the 2000 level.

Targeted chemical substances: Ammonia, caprolactam, xylene, vinyl acetate, cyclohexane, dichloromethane, toluene, 1,3-butadiene, butyl alcohol, n-hexane, benzene, methyl alcohol

Rationale: Among the harmful air pollutants and the substances subject to the PRTR, whose emissions have been strictly controlled by the Group, and the new volatile organic compounds (VOCs)\*1, those emitted in large quantity but not included in the abovementioned groups have been selected.

## Controlling Harmful Air Pollutants

In consideration of their usage volumes and potential harm, the chemical industry designated 12 harmful air pollutants among a number of harmful air pollutants as subject to voluntary management.

The UBE Group uses six of the 12 substances, namely: benzene, butadiene, acrylonitrile (raw materials for synthesis); benzene, 1,2-dichloroethane, chloroform, dichloromethane (solvents). The Group reduced their emissions by 95% in total compared with 1995 levels and is committed to carrying out further efforts to control their emissions. Regarding benzene and butadiene, which are suspected to be particularly harmful, the Group promoted drastic reduction of their emissions and achieved reductions of 97% and 86%, respectively, compared with fiscal 1995.

## Message

### Managing Toxic Chemical Substances

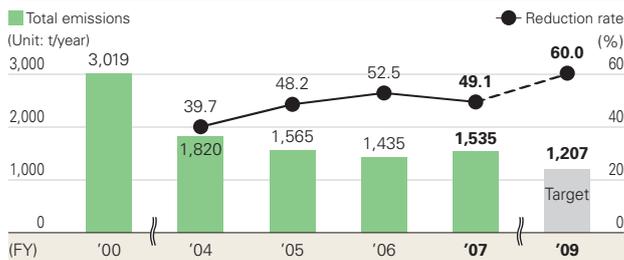
At the Ube Chemical Factory, we have adopted, in stages, a variety of measures to control the release of toxic chemical substances. Take benzene, for example. We use a stream stripping system for wastewater, reuse exhaust gas as combustion air for boilers, and recover wastewater within the facility. We have also defined priority substances, such as ammonia and cyclohexane, which are subject to our cross-functional (manufacturing, technology, and control departments) emission control. Our new production facilities, when built, will have an environmentally responsible design to minimize the release of toxic chemicals.



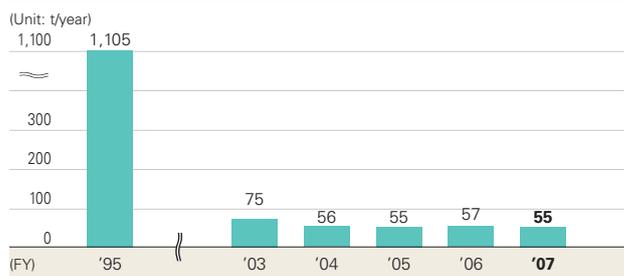
**Katsushige Houri**

Environment and Safety Group,  
Ube Chemical Factory  
Production Center,  
Production & Technology Division

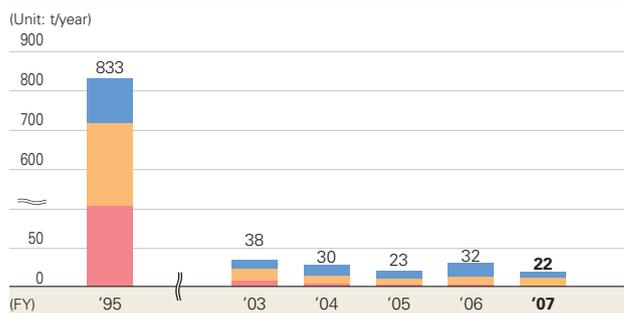
## Emissions and Reduction Rate of 12 Voluntarily Selected Toxic Substances



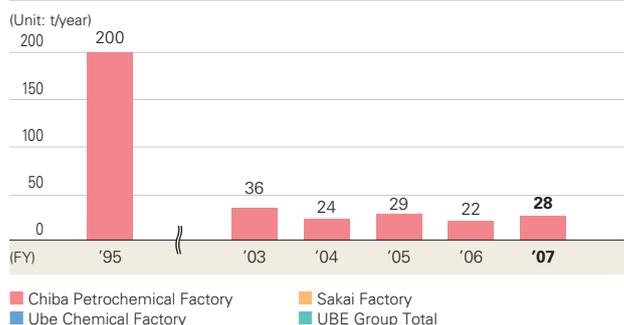
## Total Emissions of Six Substances (UBE Group)



## Benzene Emissions



## 1,3-Butadiene Emissions



Legend: Chiba Petrochemical Factory (Red), Ube Chemical Factory (Blue), Sakai Factory (Orange), UBE Group Total (Teal)

## Pollutant Release and Transfer Register (PRTR)

Recognizing the importance of chemical management, the UBE Group constantly takes measures within the course of management to reduce the discharge of chemical substances from its facilities into the environment.

In addition to the 354 substances designated under the PRTR law, the chemical industry has been controlling a total of 480 substances since 1996, which were added voluntarily by the Japan Chemical Industries Association (JCIA) as part of Responsible Care activities. Furthermore, the Group started surveying VOCs in fiscal 2005. Of these, 83 substances are handled by the Group as a whole, and 71 by UBE itself. As for the substances listed in the PRTR Law, the Group handles 46 substances, while UBE handles 34.

In fiscal 2007, our total emissions of the substances specified by the JCIA, including VOCs, were reduced by 15% from the previous year. For emissions of each substance, the

Group endeavors to make reductions by installing and operating exhaust gas treatment systems in factories and improving production processes (closed handling areas and alternative solvent usage).

### PCB (Polychlorinated Biphenyl)

Regardless of whether they are currently in use or no longer in use, the UBE Group controls PCB-containing transformers, condensers and fluorescent lighting stabilizers in its factories in accordance with the Law Concerning Special Measures against PCB Waste. The Group plans to store and treat PCBs in an appropriate and safe manner up to July 2018. We have engaged regional facilities of Japan Environmental Safety Corporation (JESCO) to provide such storage and treatment services. A portion of the stored PCBs has been treated at the Kita-Kyushu Facility of JESCO. The allowances for the costs of this treatment were fully recognized for accounting purposes.

### UBE Group Data on PRTR Substances

(Unit: t)

	Total handling volume (Volume used/produced)	Emission into atmosphere	Emission into public water	Emission into soil	Total emissions	Increase/decrease rate compared with fiscal 2006 (total emission)	Transfer volume
PRTR Law basis	608,230	444.3	182.5	0.0	626.8	-26%	1051.8
JCIA basis	2,436,334	1513.0	254.9	0.0	1767.9	-15%	1470.1

Transfer volume: Volume externally treated as waste

### Individual Emission Volumes (Limited to the Top 12 Substances Subject to the PRTR Law and Dioxins)

Ordinance designation number	Chemical substance	CAS No.	Handling volume (t)	Emission volume (t)			Total (t)	Increase/decrease rate compared with fiscal 2006 (emissions)	Transfer volume (t)
				Atmosphere	Public water	Soil			
227	Toluene	108-88-3	1,028	171.8	16.7	0.0	188.5	1%	189.7
61	ε-caprolactam	105-60-2	248,916	0.0	117.0	0.0	117.0	10%	0.2
63	Xylene	*	188	62.8	0.0	0.0	62.8	8%	23.8
40	Ethylbenzene	100-41-4	44	44.4	0.0	0.0	44.4	38%	0.0
102	Vinyl acetate	108-05-4	4,564	29.4	0.0	0.0	29.4	-42%	0.0
268	1,3-butadiene	106-99-0	98,662	28.3	0.0	0.0	28.3	26%	65.9
224	1, 3, 5 trimethylbenzene	108-67-8	26	24.2	0.0	0.0	24.2	186%	0.0
299	Benzene	71-43-2	97,095	22.0	0.8	0.0	22.7	-31%	0.0
85	Chlorodifluoromethane (HCFC-22)	75-46-6	8	7.7	0.0	0.0	7.7	-36%	0.0
177	Styrene	100-42-5	177	5.1	0.0	0.0	5.1	38%	4.7
304	Boron and boron compound	*	37	0.8	3.9	0.0	4.7	15%	1.3
145	Dichloromethane (methylene chloride)	75-09-2	164	3.7	0.0	0.0	3.7	54%	160.5
179	Dioxins	*	14	291	7	0.0	298	18%	0.2

CAS No.: Chemical Abstract Service registry number. \*: contains various compounds

Unit for dioxins: mg-TEQ/year



### Glossary

\*1 VOCs (Volatile Organic Compounds): Collective term referring to organic chemical compounds that vaporize easily and enter the atmosphere. VOCs are arguably one of the sources of suspended particle matters and photochemical oxidant. The Japanese government plans to reduce the nation's VOC emissions by 30% over the fiscal 2000 levels by fiscal 2010.

# Promoting Waste Recycling toward a Recycling-Based Society

The UBE Group is promoting waste recycling and thus using a wide variety of waste generated from within and outside of the Group as fuel and raw materials for cement production.

## Waste Recycling at Cement Factories

Waste can be used as a raw material (material cycle) and fuel (thermal cycle) in the cement-making process. For this reason, a wide variety of waste is treated at cement factories.

The high calcining temperature of the cement kilns (1,450°C) burns and degrades substances that cannot be treated by ordinary incinerators. The kilns also offer a large waste-processing capacity. Ash produced by incineration can also be used as an alternative to clay, a component of cement, eliminating the need for final disposal sites for incineration ash.

### Recycling Volume at Cement Factories

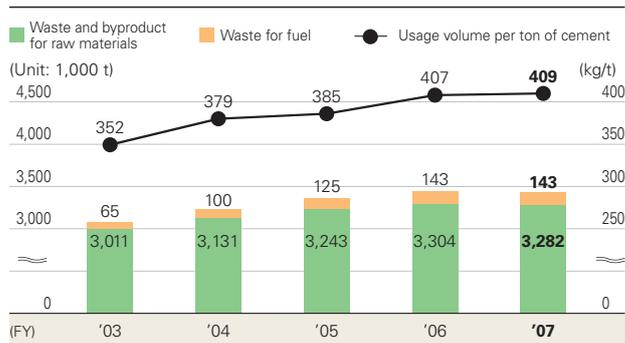
UBE's three cement factories actively accept and use various waste material, such as slag, coal ash, refuse incineration ash, sludge, waste fluids and waste plastics, from UBE and companies both inside and outside the Group. In fiscal 2007, the Group's cement factories made effective use of around 3.4 million tons of waste and byproducts. Of this, about 3.2 million tons was sourced from outside the UBE Group. This is one way the Group is contributing to the formation of a recycling-based society.

In 2008, the facility to treat refuse incineration ash at the Kanda Factory will start operation. Currently, refuse incineration ash is sent to local government landfill sites for final disposal. In addition, we are planning to reinforce the facilities to treat refuse

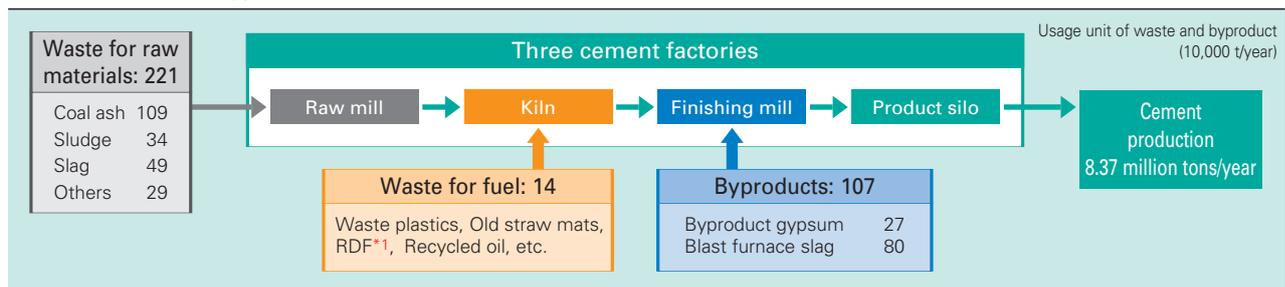
ash generated by incinerating residential waste. At the Isa and the Kanda Factories, we will also increase the capabilities of the facilities to treat certain types of waste plastic, such as that with high chlorine content and that which is difficult to crush, aiming to increase the availability of recycled plastic by about 40,000 tons annually.

With further reinforcement of its capabilities to recycle a wider range of waste, the UBE Group will continue working to improve and expand its recycling operations.

Waste and Byproduct Consumption Volume at Cement Factories



Flow of Waste and Byproduct Utilization in Cement Factories in Fiscal 2007



## Message

### Recycling Waste within the Cement-Making Process

Among UBE's three major cement factories, the Kanda Cement Factory is functioning as the lead factory for waste treatment. The cement manufacturing process is well suited to recycle waste safely. Making the most of this nature, we at the Kanda Factory develop new waste treatment technologies, such as the high-chlorine bypass system, and install and expand related facilities in a systematic manner to achieve a greater volume of waste treated and a more sophisticated recycling process. While placing great emphasis on quality and environmental friendliness, we will work together with everybody who is involved in our factory business to come up with fresh, flexible ideas to achieve Japan's best recycling practice.



**Makoto Koyama**

Manager of Production Department, Kanda Cement Factory,  
Production & Technology Division, Cement & Construction Materials Company

# Reducing Final Waste Disposal through Appropriate Industrial Waste Management

The UBE Group is working to reduce external final disposal by managing the disposal of its industrial waste properly in accordance with its medium-term plan for voluntary waste reduction.

## Medium-Term Plan for Voluntary Waste Reduction

Targets call for a Group-wide reduction of external final disposal by 60% within fiscal 2009, as compared with the fiscal 2000 level. (Already achieved a 69% reduction in fiscal 2007)

## Status of Industrial Waste Reduction Activities

### Types of Industrial Waste

Industrial waste is generated by many sources. Chemical-related factories and facilities generate sludge, waste oil and waste plastic; on-site power generating and ammonia plants generate coal ash, and machinery factories generate waste oil and inorganic waste, etc.

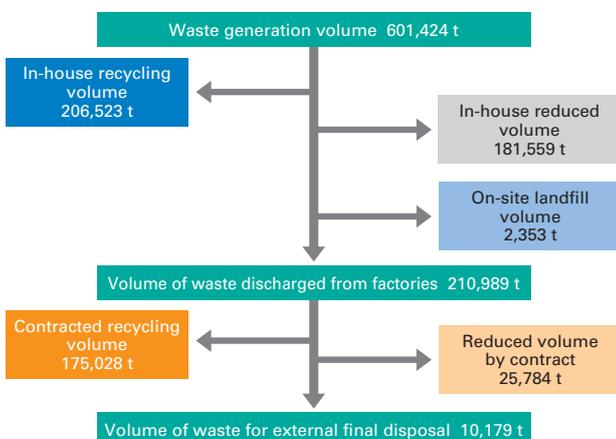
### Recycling of Industrial Waste

In the district of Ube, most of the internal industrial waste is recycled within the Group.

### Factory Derived Industrial Waste Treated by External Sectors

In fiscal 2007, the UBE Group reduced industrial waste from its factories by 4% from the fiscal 2006 level. When contracting waste treatment or disposal to outside companies, the Group utilizes the industrial waste management form (waste manifest system) in compliance with the waste treatment and clean-up laws, and strictly monitors the entire process until final disposal.

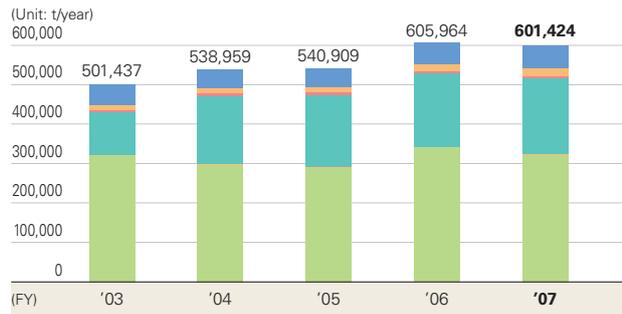
## Overall Flow of Industrial Waste in Fiscal 2007



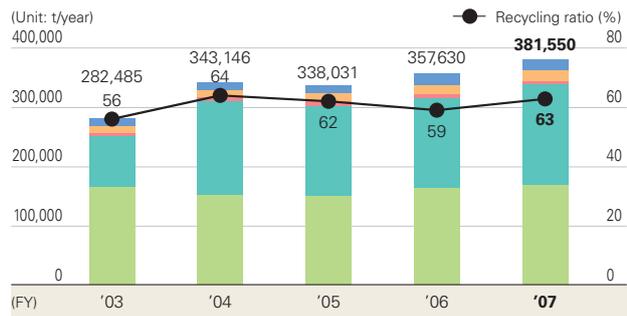
## Glossary

\*1 Refuse Derived Fuel (RDF): Solid fuel made by compressing waste plastic, scrap wood and general garbage.

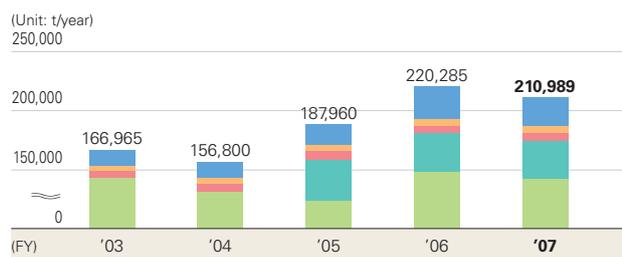
## Industrial Waste Generation Volume



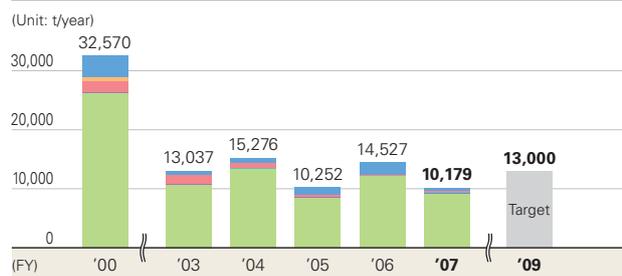
## Industrial Waste Recycling Volume and Ratio



## Volume of Industrial Waste Discharged from Factories



## Volume of Industrial Waste for External Final Disposal



Legend for charts:  
 Green: Group companies  
 Purple: Corporate Research & Development  
 Teal: Energy & Environment  
 Orange: Machinery & Metal Products  
 Red: Cement & Construction Materials  
 Blue: Chemicals

# Making Ongoing Efforts to Prevent Air and Water Pollution

The UBE Group has long been engaged in pollution prevention. For more than 60 years, we have been working to keep air and water pollution at bay under the "Ube Method" joint efforts with local communities, academia, and governmental authorities.

## Measures to Prevent Air and Water Pollution

Responding to regulations for enclosed sea areas such as the Seto Inland Sea, the UBE Group has installed additional monitoring systems to ensure compliance. In particular, our chemical plants that can have a major impact on public water quality discharge water only after it has been purified by such means as activated-sludge or wet oxide processes. Efforts to reduce emissions include monitoring at the source.

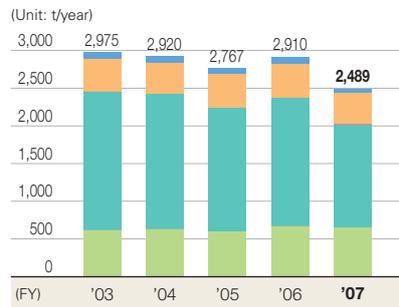
Furthermore, the UBE Group continuously monitors environmental measurements taken at sites throughout Ube City and the resulting data is reflected in factory operations according to our established voluntary air pollution prevention management standards.

In the Ube district, we have established an odor monitoring system to respond promptly to odor complaints in cooperation with the governmental authorities.

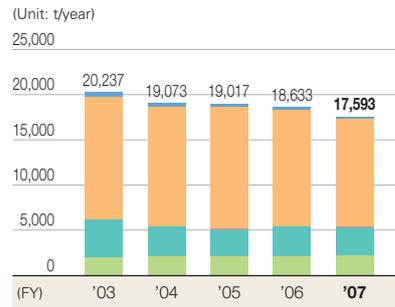


Sprinkling water at the Okinoyama Coal Center to prevent the generation and spreading of dust

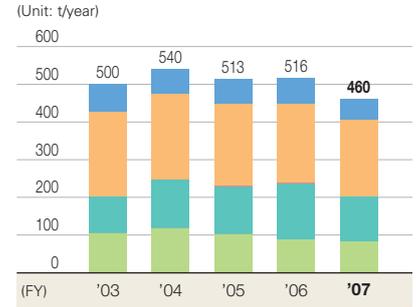
### SOx Emissions\*1



### NOx Emissions\*2



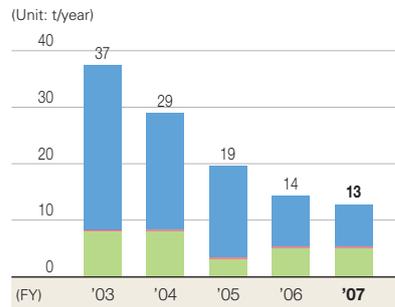
### Dust Emissions



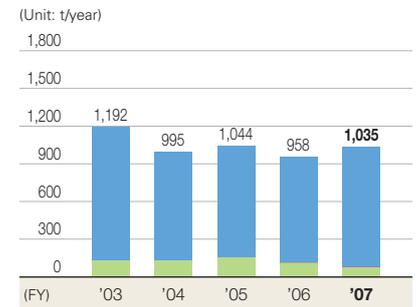
### COD Emissions\*3



### Total Phosphorus Emissions\*4



### Total Nitrogen Emissions\*4



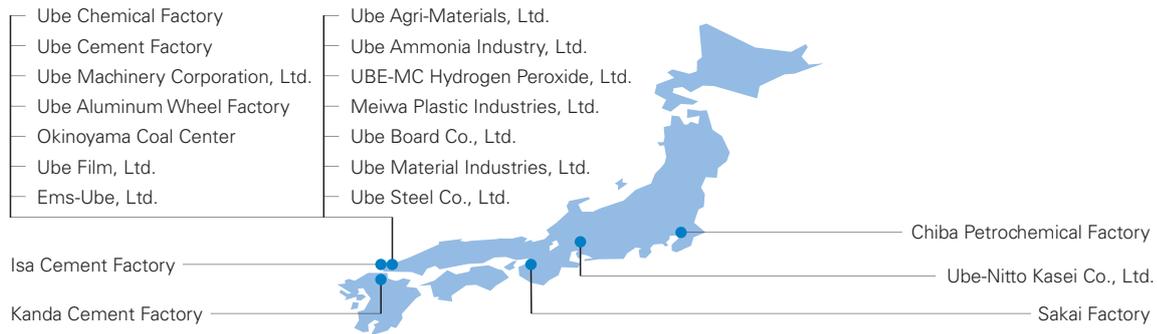
■ Group companies ■ Corporate Research & Development ■ Energy & Environment ■ Machinery & Metal Products ■ Cement & Construction Materials ■ Chemicals

## Glossary

- \*1 SOx: Sulfur oxides originate in the sulfur (S) component of fuels. Boilers are the main sources of SOx.
- \*2 NOx: Nitrogen oxides originate in the nitrogen (N) components of fuel and air when a fuel is combusted in the air. Boilers and cement kilns are the main sources of NOx.
- \*3 COD (Chemical Oxygen Demand): This is an indicator of water pollution by organic substances and represents the amount of oxygen consumed in the chemical oxidation of organic matter.
- \*4 Total phosphorus, total nitrogen: These are indicators related to the maintenance of living environments in oceans and lakes.

## Information

### Key Production Bases in Japan



## Site Reports—Ube Industries, Ltd.

### Ube Chemical Factory

**Location:** 1978-10 Kogushi, Ube City, Yamaguchi Prefecture

**Start of operations:** 1933  
**Site area:** 671,000 m<sup>2</sup>  
**No. of employees:** 992

**Main products:** Caprolactam, nylon resin, active pharmaceutical ingredients, intermediates, fine chemicals, high-purity chemicals, industrial chemicals, polyimide resins, separation membranes, new materials



Our factory is the birthplace and the core plant of UBE's chemical business. Located adjacent to an urban area, we carry out operations, paying particular attention not to inconvenience nearby residents. We have defined the four safety themes—"occupational safety," "environmental safety," "process safety" and "quality safety"—and strive hard to improve customer satisfaction and embody the spirit of "living and prospering together" guided by these concepts. Each year, the factory workers hold the Summer Chemical Festival to interact with people in the local community. We hope to see you there.



**Hideyuki Sugishita**  
Executive Officer,  
Factory Manager

### Chiba Petrochemical Factory

**Location:** 8-1 Goi Minami Kaigan, Ichihara City, Chiba Prefecture

**Start of operations:** 1964  
**Site area:** 562,000 m<sup>2</sup>  
**No. of employees:** 211

**Main products:** Polyethylene, Butadiene Rubber, waterproofing materials, polyimide products (COF)



As a factory that manufactures petrochemical products, we aim to operate our business in such a way that we can earn trust from, contribute to, and prosper with, the local community. To this end, we have strict systems in place to ensure safe and stable operations. We also continually improve factory facilities, provide training programs for employees, and execute the operational management system. Furthermore, we strive to reduce emissions of butadiene and other substances that have a great impact on the environment. As a factory open to communities, we also welcome victory visits and organize events to interact with local people. Please come visit the factory and let us know your candid opinions.



**Makoto Aikawa**  
Factory Manager

### Sakai Factory

**Location:** 3-1 Chikko Shinmachi, Nishi-ku, Sakai City, Osaka

**Start of operations:** 1967  
**Site area:** 463,000 m<sup>2</sup>  
**No. of employees:** 251

**Main products:** Caprolactam, ammonia, liquefied carbon dioxide, electrolytes, gas separation membrane, recycle compound



Established in 1967, our factory has been manufacturing a variety of chemical products over 40 years with long-standing support from the local community. We currently produce the flagship caprolactam (used to make nylon), ammonia (used to make caprolactam), and specialty materials (that have energy-saving properties and thus meet today's social needs). We have also begun manufacturing electronics materials (used to produce home appliances). As a member of the local community, we will go to great lengths to conduct safe operations, protect the environment, and live up to the spirit of living and prospering together with the local community.



**Junichi Misumi**  
Factory Manager

### Ube Cement Factory

**Location:** 1978-2 Kogushi, Ube City, Yamaguchi Prefecture

**Start of operations:** 1923  
**Site area:** 484,000 m<sup>2</sup>  
**No. of employees:** 199

**Main products:** Cement, perlite



To meet diversified customers' needs, we manufacture special cement products, such as high-early-strength cement and low-heat cement. We use the waste and byproduct materials sent from all over the country as raw materials and fuels to make such cement. This allows us to use fewer natural resources and to make significant contributions toward a recycling-based society. We also have a facility to produce fuel from waste wood chips and we use this as a partial fuel source for in-house power generation. In this manner, we contribute to the reduction of CO<sub>2</sub> emissions, a major factor in global warming. We will continue our factory-wide efforts to conserve the environment, maintain and improve safe and assuring operations, and become even more open to society.



**Michio Maruoka**  
Factory Manager

## Information

### Isa Cement Factory

**Location:** 4768 Isa, Isa-cho, Mine City, Yamaguchi Prefecture  
**Start of operations:** 1948  
**Site area:** 255,000 m<sup>2</sup> (excluding mines)  
**No. of employees:** 156  
**Main product:** Cement, lime stone



Located in Mine City, known for the karst landscape of Akiyoshidai Quasi-National Park, Isa Cement Factory has one of the largest cement manufacturing and limestone mining operations in Japan.

Our factory policies call for collective efforts with partner companies in complying with fundamental rules and raising safety awareness; creation of a comfortable, transparent workplace; and contribution to a recycling-based society by reinforcing waste management and promoting use of waste-derived materials. Following these policies, we have been working to maintain safe operations and zero accidents. To increase our waste treatment capacity, an additional facility to treat waste plastic is now undergoing construction.

As our plant and mine are near residential areas, we are paying utmost attention to protect the environment. We also aim to build and maintain a harmonious relationship with the local community. As a part of such efforts, we participate in various local events and operate factory tours.



**Masataka Ichikawa**  
Factory Manager

### Ube Machinery Corporation, Ltd.

**Location:** 1980 Okinoyama, Kogushi, Ube City, Yamaguchi Prefecture  
**Start of operations:** 1942  
**Site area:** 270,000 m<sup>2</sup>  
**No. of Employees:** 668  
**Main products:** Die-casting machines, injection molding machines, extrusion presses, crushing machine, ceramic machine, transportation equipment, water screen equipment, bridge members, floodgates, steel structures, others



As a core company of the Machinery Division, we manufacture industrial machinery under a customer-centric approach with an integrated management system for quality control (ISO 9001), environmental management (ISO 14001), and safety assurance (OHSAS 18001) in place. This three-pronged system allows us to be flexible in addressing customer demand, which is continuously diversifying as globalization progresses.

Our die-casting machines, electric injection molding machines, and crushing machines in particular have undergone technological innovation to achieve higher energy and space efficiencies and greater functionality. Designed considering their social implications, these environment- and people-friendly machines are in operation all over the world. As we recognize that quality manufacturing hinges on people's skills, we launched a *Monozukuri* [manufacturing] Center as a place to improve and pass down manufacturing techniques and skills, responding to customers' expectations and trust. We are also working continuously with partner companies to improve our safety standards and eliminate safety risks and accident cases, and, ultimately, to establish a safety-oriented culture. We will continue to provide products and services that can satisfy customers around the globe, while maintaining a harmonious relationship with the local community.



**Masahisa Matsumae**  
Senior Managing Director, Head of Manufacturing Headquarters

### Kanda Cement Factory

**Location:** 7 Nagahama-machi, Kanda-cho, Miyako-gun, Fukuoka Prefecture  
**Start of operations:** 1964  
**Site area:** 205,000 m<sup>2</sup> (excluding mines)  
**No. of employees:** 66  
**Main Product:** Cement



Kitakyushu's Kanda district is full of vibrancy as it attracts factories of Japan's leading companies, including automotive and electric power firms, thanks to its excellent logistics infrastructure (land, air, and sea).

We have been leveraging the nature of the cement-making process to promote waste treatment practices that benefit both the local community and a recycling-based society. We also pay utmost attention to environmental concerns during factory operations. We treat a great amount of waste to convert it into fuel, leading to reduced CO<sub>2</sub> emissions, a major cause of global warming.



**Mikio Mori**  
Factory Manager

### Ube Aluminum Wheel Factory

**Location:** 2575-62 Fujimagari, Ube City, Yamaguchi Prefecture  
**Start of operations:** 1987  
**Site area:** 110,000 m<sup>2</sup>  
**No. of employees:** 267  
**Main products:** Aluminum car wheels



We utilize the squeeze casting method to manufacture aluminum wheels. Compared with commonly used casting methods, this unique technique gives stronger organizational structure and enables wheel weight to be reduced. Because aluminum wheels contribute to improvements in vehicle fuel consumption rates, they are increasingly being incorporated in fuel-efficient hybrid cars. We stand by the following three basic policies in promoting our production activities: "Assurance of a stable and constant supply of products that ensures customer satisfaction and fulfills customers' expectations;" "Assurance of safe and comfortable working environments;" and "Realization of resource saving and reduction of waste." All the factory employees and partner companies are making collective efforts to achieve further progress in our day-to-day operations.



**Kiyoto Hidaka**  
Factory Manager

### Okinoyama Coal Center

**Location:** 1980-29 Okinoyama, Kogushi, Ube City, Yamaguchi Prefecture  
**Start of operations:** 1980  
**Site area:** 435,000 m<sup>2</sup>  
**No. of Employees:** 35  
**Main products:** Storage and distribution of coal and petroleum coke



In fiscal 2007, we handled more than 6 million tons of coal, the largest volume ever, despite its soaring price and tight supplies. The Center intends to keep meeting customers' expectations by making even greater efforts to maximize handling capacity, promote collective on-site activities with partner companies, implement the occupational health and safety and the environmental management (ISO 14001) systems, and carry out measures to achieve process safety and disaster prevention.



**Sadao Fujimoto**  
Center Manager

## Site Reports—Major Group Companies

### Ube Film, Ltd.

**Location:** 1020 Onoda, Sanyo-Onoda City, Yamaguchi Prefecture  
**Start of operations:** 1964  
**Site area:** 50,000 m<sup>2</sup>  
**No. of employees:** 247  
**Main products:** Wrapping film for home use, wrapping film for commercial use, others



We are committed to being a company that contributes to society by providing a wide variety of polyolefin products—ranging from wrapping film for home use to industrial materials—which can earn customer satisfaction and confidence. Our core Onoda Factory has acquired ISO certifications pertaining to its environmental management and quality control. The factory is preparing to obtain OHSAS (health and safety) certification within fiscal 2008.



**Hiroshi Nakamura**  
President

### Ems-Ube, Ltd.

**Location:** 1978-96 Kogushi, Ube City, Yamaguchi Prefecture  
**Start of operations:** 1992  
**Site area:** 13,500 m<sup>2</sup>  
**No. of employees:** 21  
**Main products:** Lauro lactam, caprolactam, ammonium sulfate



Ems-Ube is the joint company of Swiss-based EMS-CHEMIE Holding AG and Ube Industries, Ltd. Our office and facilities are located within the premises of the Ube Chemical Factory. We are Asia's sole manufacturer of lauro lactam. Based on our ISO 9001, ISO 14001, and OHSAS 18001 certified management systems, we practice quality, environment, and occupational health & safety management. We are committed to being a factory that brings satisfaction to both customers and employees, one that develops and grows with the local community.



**Hideyuki Sugishita**  
President

### Ube Agri-Materials, Ltd.

**Location:** 1988-7 Kogushi, Ube City, Yamaguchi Prefecture  
**Start of operations:** 1955  
**Site area:** 30,000 m<sup>2</sup>  
**No. of employees:** 89  
**Main products:** Compound fertilizer, seedling soil, gardening fertilizer for home use



We have been working to increase the demand for slow release fertilizer (oxamide covering fertilizer), which is a safe, environmentally friendly product that customers can use without worries. Based on ISO 14001 and other management systems, we operate our manufacturing business, which values harmony with society, by aiming to contribute to agricultural development.



On August 1, 2008, Ube Agri-Materials, Ltd. was integrated with four group companies of Mitsubishi Corporation to form MC Ferticom, Co., Ltd.

**Naohiko Munakata**  
President

### Ube Ammonia Industry, Ltd.

**Location:** 2575 Fujimagari, Ube City, Yamaguchi Prefecture  
**Start of operations:** 1972  
**Site area:** 176,000 m<sup>2</sup>  
**No. of employees:** 88  
**Main products:** Ammonia



We produce ammonia, which is a basic raw material used by many factories in the Ube Industrial Complex. As we handle hazardous substances and high-pressure gas in our manufacturing process, securing safe and environmentally friendly operations is our top priority. We are making factory-wide efforts to maintain a risk-free workplace.



**Osamu Kameda**  
President

### UBE-MC Hydrogen Peroxide, Ltd.

**Location:** 2575-78 Fujimagari, Ube City, Yamaguchi Prefecture  
**Start of operations:** 1992  
**Site area:** 13,000 m<sup>2</sup>  
**No. of employees:** 34  
**Main products:** Hydrogen peroxide



Hydrogen peroxide, a clean chemical, is seeing steady growth of demand. As this is a hazardous material, which could cause significant damage if it exploded, our management policy calls for safe operations and stable product supply. This is the initial step to perform our CSR duties. In response to growing environmental concerns, we have also begun disclosing our CO<sub>2</sub> emissions. Furthermore, recent business integration with Mitsubishi Corporation will allow us more opportunities to use swap transport arrangements, which is expected to achieve greater emission reductions.



**Shuji Yamamoto**  
President

On January 1, 2008, Kemira-Ube Ltd. changed its name to UBE-MC Hydrogen Peroxide, Ltd., reflecting the simultaneous underlying ownership change to Mitsubishi Corporation/Ube Industries, from Finland-based Kemira/Ube Industries.

### Meiwa Plastic Industries, Ltd.

**Location:** 1988-20 Kogushi, Ube City, Yamaguchi Prefecture  
**Start of operations:** 1946  
**Site area:** 20,000 m<sup>2</sup>  
**No. of employees:** 134  
**Main products:** Phenol type industrial resins, extruded plastics, polyimide resin



As a part of our mainstay phenol resin for electronic material, we produce non-halogen, flame-retardant biphenyl resin, which helps conserve the global environment. Our community contribution programs include sponsorship of the Yamaguchi Junior Soccer Tournament and the Ube Ekiden Relay Race.



**Yoshiki Suzuki**  
President

## Information

### Ube-Nitto Kasei Co., Ltd.

#### Gifu Factory

**Location:** 2-1-1 Yabuta-Nishi, Gifu City, Gifu Prefecture

**Start of operations:** 1966

**Site area:** 154,000 m<sup>2</sup>

**No. of employees:** 199

**Main products:** Material for optical communication cables, high-purity silica particles, flexible copper-clad laminate, FRP products, hollow-structured films for agricultural use, plastic cardboard



#### Fukushima Factory

**Location:** 1-10 Shiojima, Fukuhara, Fukuyama-cho, Kooriyama City, Fukushima Prefecture

**Start of operations:** 1966

**Site area:** 30,000 m<sup>2</sup>

**No. of employees:** 57

**Main products:** Conjugated fiber for hygienic materials, high-strength polypropylene fiber, reinforcement fiber for concrete, material for optical communication cables

We have been engaged in quality control, environmental management, and health and safety activities based on our ISO 9001, ISO 14001, and OHSAS 18001 certified management systems. To protect the precious global environment for future generations, we are also striving to reduce energy consumption and waste generation.



Shinichiro Yamamoto  
President

### Ube Material Industries, Ltd.

#### Ube Factory

**Location:** 1985 Kogushi, Ube City, Yamaguchi Prefecture

**Start of operations:** 1948

**Site area:** 432,000 m<sup>2</sup>

**No. of employees:** 291

**Main products:** Magnesia clinker, other raw materials for refractory, magnesium-related chemical industry products, calcium-related chemical industry products



#### Chiba Factory

**Location:** 8-2 Goi-Minami-Kaigan, Ichihara City, Chiba Prefecture

**Start of operations:** 1974

**Site area:** 50,000 m<sup>2</sup>

**No. of employees:** 98

**Main products:** Calcia, other ceramic products, calcium-related chemical industry products

#### Mine Factory

**Location:** 4641-1 Isa-Cho-Isa, Mine City, Yamaguchi Prefecture

**Start of operations:** 1941

**Site area:** 84,000 m<sup>2</sup>

**No. of employees:** 144

**Main products:** Calcia, other ceramic products

Our production sites, Ube, Chiba, and Mine Factories, are operated to achieve three major objectives—conserving the environment, ensuring safety, and achieving high quality. To further strengthen these operational pillars, we have respective management systems (EMS, OSHMS, and QMS) in place. Operating these systems effectively, we are aiming to achieve even more environmentally friendly operations, to create a safer and more comfortable workplace, and to produce products of even higher quality. We are striving to become an excellent company filled with vibrancy, cheerfulness, persistence, and motivation.



Kenichi Abe  
President

### Ube Board Co., Ltd.

#### Ube Factory

**Location:** 1988-1 Okinoyama, Kogushi, Ube City, Yamaguchi Prefecture

**Start of operations:** 1950

**Site area:** 97,000 m<sup>2</sup>

**No. of employees:** 166

**Main products:** Exterior materials (cement siding board, slate board), Interior materials



#### Fuji Factory

**Location:** 704-65 Hamazoe, Gokanjima, Fuji City, Shizuoka Prefecture

**Start of operations:** 1967

**Site area:** 23,000 m<sup>2</sup>

**No. of employees:** 26

**Main products:** Exterior materials (slate board), flooring materials

As a housing-related material company, we pursue achieving harmony with nature, co-existence with the environment, and safe manufacturing of safe products, all of which we believe are basic elements of our responsibilities to society. To this end, we are endeavoring to conserve the global environment by taking aggressive measures to prevent pollution, reduce environmental impacts, curb resource consumption, and recycle waste.



Nobuhiro Kataoka  
President

### Ube Steel Co., Ltd.

**Location:** 1978-19 Okinoyama, Kogushi, Ube City, Yamaguchi Prefecture

**Start of operations:** 1989

**Site area:** 102,000 m<sup>2</sup>

**No. of employees:** 201

**Main products:** Billets, castings



We produce billets and castings mainly from scrap metal. We also dispose of and treat waste plastic, medical waste, and other industrial waste. Through our business, we aim to recycle resources and to achieve zero emissions. Based on ISO 9001, ISO 14001, OHSAS 18001 and other management systems, we have been engaged in company-wide activities in quality assurance, environmental management, and safety control. At the same time, we have been working to make positive contributions to the local community.



Motofumi Ishii  
President

## Site Reports—Overseas Plants

### Canada

#### Ube Automotive North America Sarnia Plant, Inc.

**Location:** Ontario, Canada

**Start of operations:** 2002

**Site area:** 283,000 m<sup>2</sup>

**No. of employees:** 258

**Main product:** Aluminum car wheels



We have established our safety and environment-related targets for this fiscal year. With steady, day-to-day efforts, we are now on the right track to achieve those goals. We acquired ISO 14001 certification in 2003, and develop and operate relevant management systems to satisfy its safety and environmental requirements. In 2008, we also began to set each month's priority areas for safety control items, in reference to accident cases of Ube, to increase precautionary awareness in all employees.



Rob McPherson  
Factory Manager

## Thailand

### Thai Caprolactam Public Co., Ltd.

**Location:** Rayong, Thailand  
**Start of operations:** 1996  
**Site area:** 192,000 m<sup>2</sup>  
**No. of employees:** 410  
**Main product:** Caprolactam, ammonia sulfate



### Ube Nylon (Thailand), Ltd.

**Location:** Rayong, Thailand  
**Start of operations:** 1997  
**Site area:** 23,000 m<sup>2</sup>  
**No. of employees:** 88  
**Main product:** Nylon 6 resin, nylon compound



### Thai Synthetic Rubbers Co., Ltd.

**Location:** Rayong, Thailand  
**Start of operations:** 1998  
**Site area:** 40,000 m<sup>2</sup>  
**No. of employees:** 89  
**Main product:** Butadiene rubber



In fiscal 2007, all three Thailand UBE Group plants (TCL, UNT, TSL) maintained consistent operations. In 2008, a CDM project will be implemented to reduce N<sub>2</sub>O emissions from the caprolactam manufacturing process at TCL (see p.10-13). At TSL, we have installed a solvent collection facility and a wastewater filtration facility to make our operations more environmentally friendly. At UNT, construction of the new 50 kt/y facility for manufacturing nylon has begun. Operation of the completed facility will allow us to make further contributions to development of the local economy.



Charunya Phichitkul  
CEO

## Spain

### Ube Corporation Europe, S.A./ Ube Chemical Europe, S.A.

**Location:** Castellon, Spain  
**Start of operations:** 1967  
**Site area:** 295,000 m<sup>2</sup> (including UEP)  
**No. of employees:** 251  
**Main products:** Caprolactam, ammonium sulfate, polycarbonatediol, 1,5-pentadiol, 1,6-hexanediol



### Ube Engineering Plastics, S.A.

**Location:** Castellon, Spain (adjoining UCE)  
**Start of operations:** 2004  
**No. of employees:** 44  
**Main products:** Nylon 6 resin, copolymerized nylon



The UBE Group's plants in Spain have successfully raised their production of nylon 6 resin without causing any negative effects on the environment. In 2007, we saw the increase of both CO<sub>2</sub> emissions and industrial waste generation due to the overhaul of a boiler that uses liquid waste as fuel, but we expect those to revert to normal levels in 2009, when the overhaul will be completed.

We have been working to reduce drainage outflows. In addition to the renovation of the sewer network, in 2007, we established a pilot plant equipped with a water purification system using a reverse osmosis membrane and a microfilter. We are aiming at even further reduction down the road.



Ricardo Lopez  
CEO

## Fiscal 2007 Environmental Data by Factory

(Unit: tons/year)

	CO <sub>2</sub> emissions* (1,000 tons-CO <sub>2</sub> )	SO <sub>x</sub> emissions	NO <sub>x</sub> emissions	Dust emissions	COD emissions	Total nitrogen emissions	Total phosphorus emissions	Final industrial waste disposal volume
Ube Chemical Factory	804	1,429	3,228	131	527	539	4.4	146
Chiba Petrochemical Factory	182	0.2	3.3	2.3	11	6.5	0.3	197
Sakai Factory	557	0	194	37	266	410	2.6	133
Ube Film, Ltd.	6	-	-	-	0	-	-	0
Meiwa Plastic Industries, Ltd.	19	-	-	-	0.1	0	0	57
Ube Ammonia Industry, Ltd.	1,651	513	787	8	239	72	4.6	23
Ube Agri-Materials, Ltd.	12	3.2	0.2	3.4	0.1	0.4	0.1	104
Ems-Ube, Ltd.	38	0	6.3	0	10.8	1.8	0	0
UBE-MC Hydrogen Peroxide, Ltd.	20	-	-	-	0.2	0	0	0
Ube-Nitto Kasei Co., Ltd.	22	3.1	3.4	0.3	2.2	0	0	30
Ube Cement Factory	1,337	60	1,965	53	11	-	-	0
Isa Cement Factory	3,527	348	8,047	105	0	-	-	4
Kanda Cement Factory	1,389	4	1,925	46	2	-	-	1
Ube Material Industries, Ltd.	2,016	28	1,346	56	209	158	7.3	1,357
Ube Board Co., Ltd.	27	0.6	7.9	3	0.1	0.1	0	7,586
Ube Machinery Corporation, Ltd.	16	0.1	-	-	1.2	1.8	0.2	137
Ube Aluminum Wheel Factory	71	0.5	13.2	1.1	0.2	0.3	0.04	157
Okinoyama Coal Center	10	-	-	-	0	-	-	47
Ube Steel Co., Ltd.	59	14	51	14	0.9	0	0	117
Spain	135	210	440	6	201	236	2.8	20,968
Thailand	284	117	202	56	65	43	0	982
Canada	39	0.1	17.9	14	34	1.3	0.3	424

\* Total of energy- and non-energy-based CO<sub>2</sub> emissions (excluding CO<sub>2</sub> emitted by using waste as raw material and/or fuel)

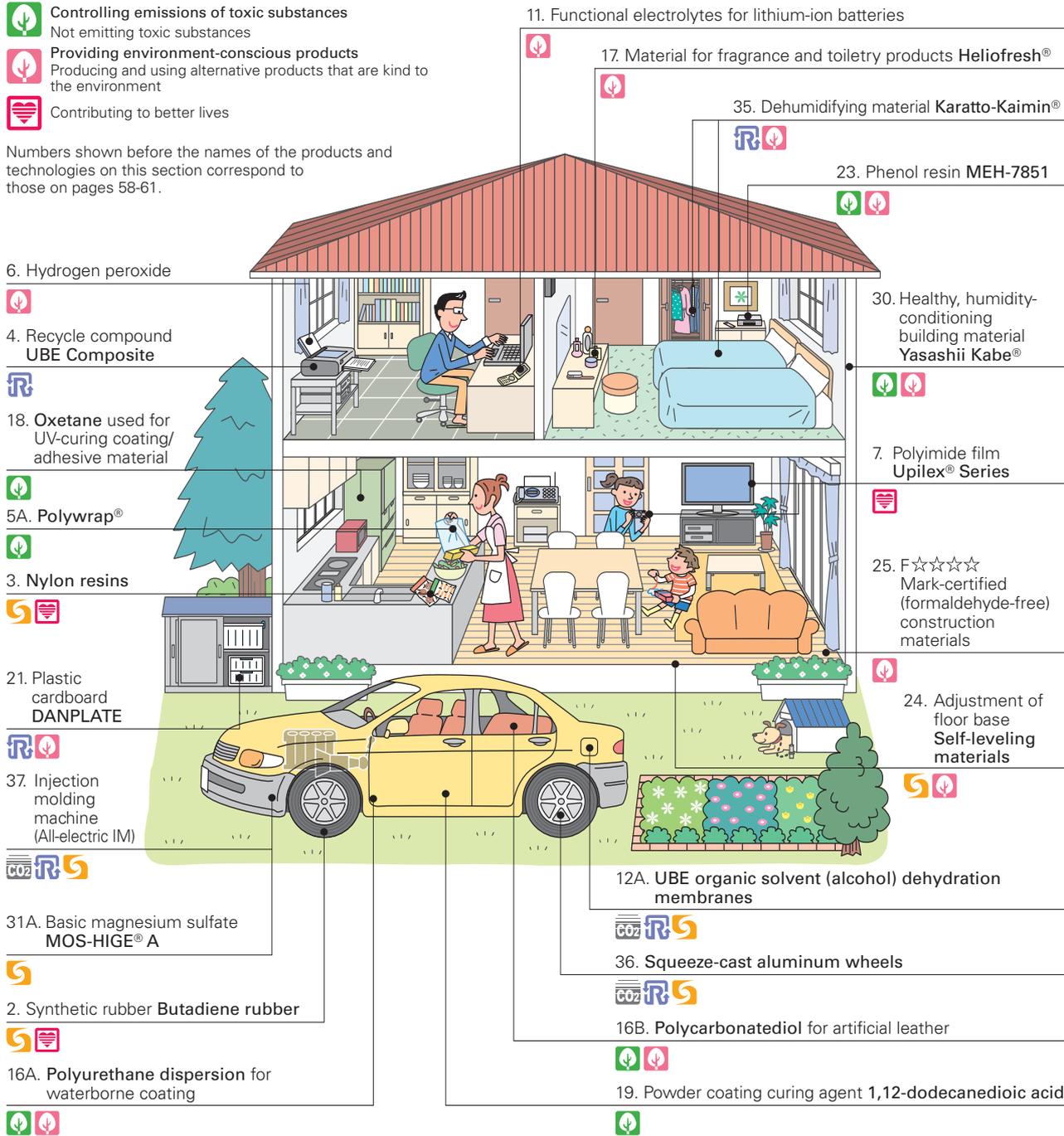
# Socially Valuable Products and Technologies of UBE Group

The UBE Group provides a large variety of products and technologies, ranging from those related to the automobile and information industries to those in use in society, its accompanying infrastructure and daily life. The Group actively promotes projects that enable reductions in CO<sub>2</sub> emissions and the creation of a recycling-based society in all its business fields and works hard to provide "products and technologies that are friendly to both humans and the environment." Introduced here are some of the UBE Group's products, which total more than 500.

**Legend: Product benefits**

-  **Reducing CO<sub>2</sub> emissions**  
Reducing emissions of greenhouse gases known to contribute to global warming
-  **Recycling**  
Reusing waste or improving the quality of waste for effective recycling and utilization of resources
-  **Purification of water**  
Improving the quality of water and sterilizing water to preserve a clean environment
-  **Energy saving**  
Streamlining and improving the efficiency of fuel, facilities, and processes, and spending time effectively
-  **Controlling emissions of toxic substances**  
Not emitting toxic substances
-  **Providing environment-conscious products**  
Producing and using alternative products that are kind to the environment
-  **Contributing to better lives**

Numbers shown before the names of the products and technologies on this section correspond to those on pages 58-61.



27F. Facility to produce fuel from waste plastic



43. Pressurized two-stage gasification process EUP



27C. Sewage sludge transport system using JR's containers



27B. Sewage sludge treatment facilities



27A. High-chlorine bypass system



41. Homogenizer Fuel conditioner



13. High-purity silicon nitride powder



27D. Facility to treat incineration ash from household waste



42. Energy-saving grab bucket



10. Metal organics (MO)



31B. Basic magnesium sulfate MOS-HIGE® Hybrid



32. Exhaust gas processing agent Calbreed® SII Sorbalit



9. Exhaust gas processing facility UBE RID®



14. Polyolefin microporous film for lithium-ion batteries UPORE®



29. Cement-based solidification agent U-Stabilier 50 U-Stabilier Super



44. Facility to produce biomass fuel for power plants



27G. Biomass wood chip manufacturing facility



8. Thermal control film Thermal Blanket



27E. Waste oil/liquid treatment facility



39. Facility to improve water quality with micro-bubble ozone MBO3



28. Fly ash cement



15A.B. Anti-allergic agent Tarion® Antihypertensive agent CalBlock®



22. Antifouling photo-catalytic film Hydwrap®



12C. Nitrogen separation membranes (UBE N2 Separator)



33A. Soil stabilizer Super Green Lime



40. Billets (steel ingots for rolling)



12B. UBE carbon dioxide gas separation membranes



26. Gardening material Green Thumb



1. Photocatalytic fiber modules AQUA SOLUTION®



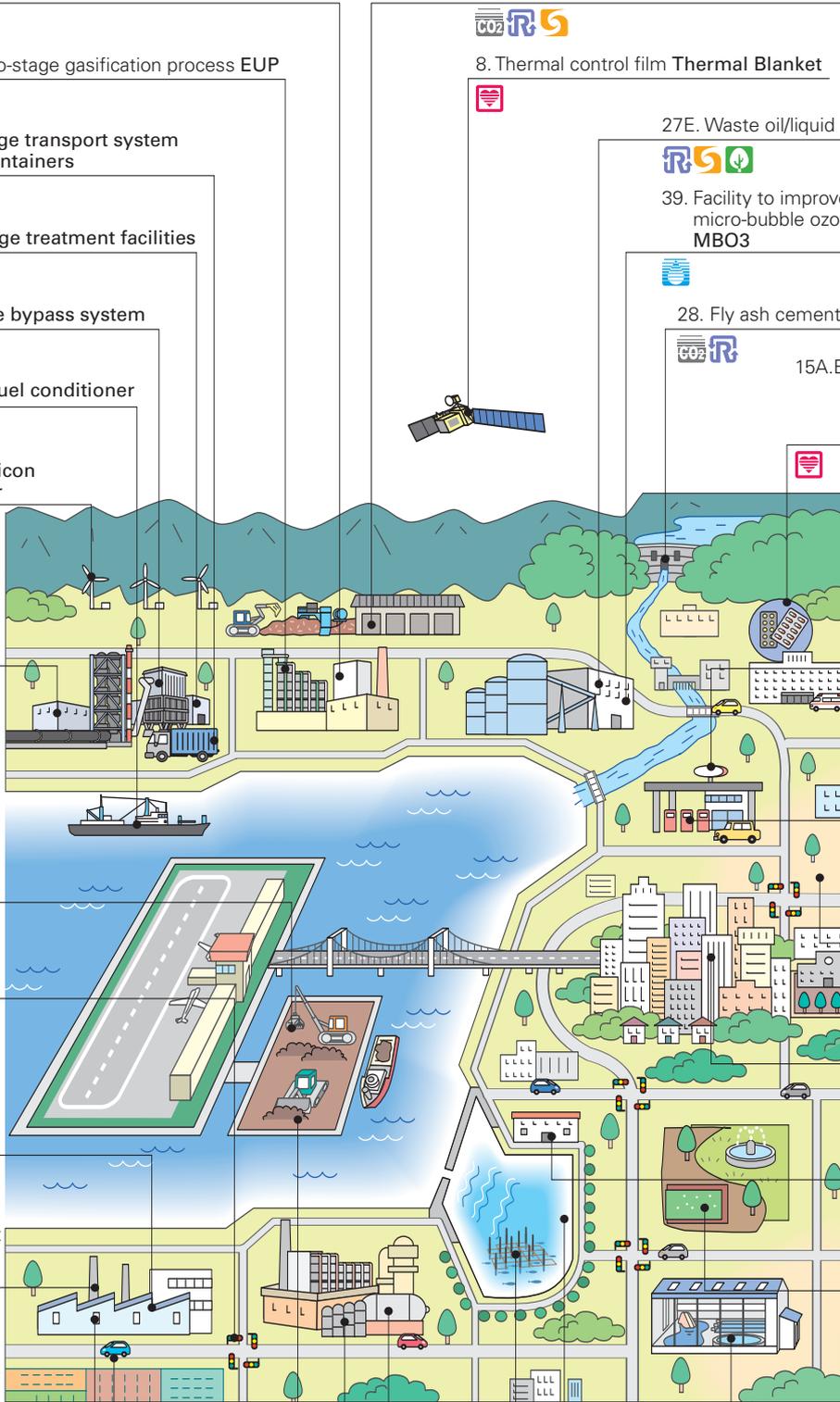
34. Sediment improvement agents Clear Water



20. Nori Seaweed farming material Compose Pipe



38. Biomass-fueled water boiler Binder Boiler



**Research & Development**

**1**  Photocatalytic fiber modules  
**AQUA SOLUTION®**  
Photocatalytic Products Team,  
Administration & Planning Department

Applications: Sterilization of bath water, purification of plating rinse water  
Features: Utilizing light to purify water (photocatalytic reaction). A human- and environment-friendly system without chemical use. Received the Environmental Minister's Prize at the 2004 GSC Awards.

**Chemicals**

**2**  Synthetic rubber **Butadiene rubber\***  
Synthetic Rubber Business Unit

Applications: Automotive tires, footwear, polystyrene quality improvement agent, etc.  
Features: More elastic and rub-resistant than natural rubber. Among the wide variety of its specialty products, **UBEPOL-VCR** is a groundbreaking product, enabling reduced weight in rubber products.

**3**  Polyamide **Nylon resin\***  
Engineering Plastics Business Unit

Applications: Automotive components including intake manifold, food wrapping film, monofilament, etc.  
Features: Made from caprolactam, it is the toughest resin among engineering plastics. Often used for automotive components, due to its good thermal and chemical resistance and easy-to-process property, helping produce lighter (i.e., energy-efficient) vehicles. Suitable for wrapping food for long-time storage because of its low oxygen transmission rate.

**4**  Recycle compound **UBE Composite\***  
RCP Project Promotion Group

Applications: Home appliances, automotive components, stationery  
Features: Color-adjusting recycle compound, which can change the color tone of waste plastics.

**5**  **A. Heat-resistant Polywrap, Polywrap®**  
**B. Shrink film Eco Soft\***  
Ube Film, Ltd.

Applications: Food wrapping film  
Features: Additive-free polyethylene wrapping film. No emission of dioxin or other toxic gases when combusted because it contains no chlorine.

**6**  Hydrogen peroxide  
UBE-MC Hydrogen Peroxide, Ltd.

Applications: Bleaching and sterilizing of pulp and paper  
Features: Reduced environmental impact of the related process. Generates non-hazardous, non-toxic water and oxygen when decomposed. Replacement for chlorine.

**7**  Polyimide film **Upilex® Series**  
Electronic Components & Materials Business Unit

Applications: Base material for ICs used in digital equipment, such as plasma/LCD TVs, cellular phones, and digital cameras.  
Features: Well-suited to be used as base material for high-resolution circuits due to its high dimensional stability with high heat resistance and rigidity.

**8**  Thermal control film **Thermal Blanket\***  
Aerospace Materials Business Group

Applications: Thermal control material for aerospace applications  
Features: Thermal control film made from Upilex® film with vapor-deposited aluminum and other materials. Used in many of Japan's artificial satellites due to its heat resistance in outer space.

Photo: JAXA

**9**  Exhaust gas processing facility **UBE RID®**  
High Purity Chemicals Business Unit

Applications: Capture exhaust emissions from semiconductor/LCD factories  
Features: Complete capture of toxic hazardous gases/powders emitted from operations of semiconductor/liquid crystal factories.

**10**  Metal organics (MO)\*  
High Purity Chemicals Business Unit

Applications: Raw material for Light-Emitting Diodes (LED)  
Features: Requires less electricity and lasts longer than conventional light bulbs.

**11**  Functional electrolytes for lithium-ion batteries  
Specialty Products Business Unit I

Applications: Electrolytes for lithium-ion batteries  
Features: Functional electrolytes are designed to customer requirements with additives for controlling battery performance.

12  Separation membranes  
**A. UBE organic solvent (alcohol) dehydration membranes**  
**B. UBE carbon dioxide gas separation membranes**  
**C. Nitrogen separation membranes (UBE N<sub>2</sub> Separator)**  
 Others: Hydrogen separation membranes; dehumidification membranes

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Separation Membranes Group  
 Specialty Products Business Unit II

A. Applications: Bioethanol dehydration  
 Features: Effectively dehydrates azeotropic compositions. Membrane separation can increase solvent concentration to more than 99%.

B. Applications: Remove CO<sub>2</sub> from bio-gases (methane)  
 Features: Membrane separation can remove carbon dioxide from gases generated by sludge and refuse, increasing the methane concentration.

C. Applications: Nitrogen generators, for example to fill tires and for use in lead-free, silver-based soldering  
 Features: Tire pressure is less likely to drop, improving safety and increasing fuel efficiency. Prevents oxidation when used in lead-free soldering.

13  **High-purity silicon nitride powder**  
 Ceramics Group  
 Specialty Products Business Unit II

Applications: Bearing balls for wind power generators, glow plugs for diesel engines, power module substrate for automobiles  
 Features: Wide range of applications because of its excellent durability and ability to prevent electrolytic corrosion.

14  **UPORE Microporous Polyolefin Film**  
 Separator Group  
 Specialty Products Business Unit II

Applications: Lithium-ion battery separators for automotive applications  
 Features: Manufactured using a dry process which is eco-friendly and free of contaminants.

15  **A. Anti-allergic agent Tarion®**  
**B. Antihypertensive agent Calblock®**  
 API & Intermediaries Business Unit

A. Applications: Medicine to alleviate allergic reactions such as hay fever  
 Features: The first pharmaceutical product developed by UBE. Good efficacy to alleviate hay fever symptoms. Marketed by Mitsubishi Tanabe Pharma Corporation.

B. Applications: Medicine to lower blood pressure  
 Features: Calcium blocker. Joint development with Daiichi Sankyo Co., Ltd., which is also responsible for sales operations.

16  Raw material for waterborne coating  
**A. Polyurethane dispersion (ETERNACOLL® UW-series)**  
**B. Polycarbonatediol\* (ETERNACOLL® UH-series)**  
 Fine Chemicals Business Unit

Application: Automotive waterborne coating, artificial leathers for luxury cars  
 A. Features: As waterborne polyurethane, contributes to the reduction of VOCs (volatile organic compounds).  
 B. Features: Used as the primary material for high-grade polyurethane applications (waterborne coating, high-durable PU resins, artificial leathers), which have low environmental impacts.

17  Material for fragrance and toiletry products  
**Heliofresh®**  
 Fine Chemicals Business Unit

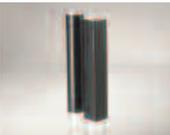
Applications: Synthetic fragrance for perfume and toiletry product  
 Features: As a replacement for natural fragrance, reduces the need to log sassafras trees (a kind of Lauraceae), helping to conserve natural environment.

18  Raw material for used for UV-curing coating/adhesive material  
**Oxetane (ETERNACOLL® EHO, OXBP, OXMA, HBOX)**  
 Fine Chemicals Business Unit

Applications: Sealant and adhesive for electronic materials  
 Features: Used as raw material for UV-curing coating/adhesive material, helping reduce VOC emissions.

19  Powder coating curing agent **1,12-dodecanedioic acid**  
 Fine Chemicals Business Unit

Applications: Curing agent for powder coating material used for automotive wheels  
 Features: As a resin curing agent for powder coating material, helps reduce VOC emissions.

20  **Nori Seaweed farming material Compose Pipe**  
 Ube-Nitto Kasei Co., Ltd.

Applications: Pipes for nori seaweed farming  
 Features: Better durability than traditional bamboo pipes. At the end of its lifecycle for the intended purpose, it will be coated again and used as agricultural poles and for other purposes.

21  Plastic cardboard **DANPLATE**  
 Ube-Nitto Kasei Co., Ltd.

Applications: Returnable boxes, delivery containers, etc.  
 Features: Returnable boxes made from DANPLATE are heavier-duty than paper ones. Can be used many times, reducing waste generation. Recyclable.

22  Antifouling photo-catalytic film **Hydwrap®**  
 Ube-Nitto Kasei Co., Ltd.

Applications: Signage, signboard, etc.  
 Features: Titanium oxide on the top layer of the film has a self-cleaning property, eliminating the environmental impacts by the use of cleaners.

23  Phenol resin **MEH-7851**  
 Meiwa Plastic Industries, Ltd.

Applications: Molding of semiconductors, laminates  
 Features: Used to harden epoxy resins. Uninflammable due to its special resin structure, eliminating the need to use halogenated flame retardant. Environmentally friendly, halogen-free material.

\* indicates an example for application.

**Cement & Construction Materials**

24  Self-leveling materials  
Construction Materials Sales,  
Construction Materials Div.

Applications: Flooring material  
Features: Its rapid-hardening property allows smooth and flat flooring to be completed within a short period, helping to accelerate the entire construction period. The use of this material involves on-site mixing: only the necessary amount of material is prepared. Because of this, it is more economical and does not generate waste (unused material, containing bags, etc.).

25  F☆☆☆☆ Mark-certified (formaldehyde-free) construction materials  
Construction Materials Sales,  
Construction Materials Div.

Applications: AFPlastering, flooring, and walling materials for living areas  
Obtained the F☆☆☆☆ Mark certification, the most rigorous formaldehyde release standard under a voluntary labeling system of Japan Building Coating Materials Association. Because of being formaldehyde-free, it does not cause negative impacts on people's health and the environment.

26  Gardening material Green Thumb\*  
Construction Materials Sales,  
Construction Materials Div.

Applications: Light artificial gardening soil  
Features: Non-toxic, germ-free artificial soil made from perlite. Facilitates plants' growth by enhancing the airflow and water retention of the soil.

27  Waste treatment technologies  
A. High-chlorine bypass system  
B. Sewage sludge treatment facilities  
C. Sewage sludge transport system using JR's containers  
D. Facility to treat incineration ash from household waste  
E. Waste oil/liquid treatment facility  
F. Facility to produce fuel from waste plastic  
G. Biomass wood chip manufacturing facility  
Material Recycle Div.

A. Features: Capable of treating waste with high-chlorine content waste, such as incineration ash from household waste and RDF.  
B. Features: Facility that uses sewage sludge as cement material.  
C. Features: Reduces CO<sub>2</sub> emissions through modal shift. Uses deodorizer-equipped containers to reduce odor levels.  
D. Features: Facility to treat incineration ash resulting from disposing of household waste and digging out old ash at waste disposal sites when renovating the sites for longer use.  
E. Features: Facility to detoxify waste oil and waste liquid.  
F. Features: Facility to crush waste plastics and produce alternative fuel (as opposed to fossil fuel).  
G. Features: Facility to produce wood chips from waste and thinned woods, which are used as fuel for electric power generation. Contribute to making the most of biomass resources.

28  Portland cement  
Fly ash cement\*  
Blast furnace slag cement  
Ube-Mitsubishi Cement Corporation

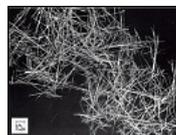
Applications: Large-scale civil engineering and construction processes  
Features: Uses industrial waste (including sewage sludge) as a part of raw materials and fuels. In addition, uses other types of industrial waste, such as blast furnace slag (generated by steel manufacturers) and fly ash (generated by coal-fired power plants), for specific types of cement.

29  Cement-based solidification agent  
U-Stabilier 50\*  
U-Stabilier Super  
Ube-Mitsubishi Cement Corporation

Applications: Soil stabilizing work  
Features: Controls the release of hexavalent chromium from stabilized soil. Controls dust generation during soil stabilizing work.

30  Healthy, humidity-conditioning building material  
Yasashii Kabe®  
Ube Board Co., Ltd.

Applications: Interior materials for restrooms, entrances, storage areas, closets, rooms with odor/high humidity  
Features: Primarily made from natural diatomite. Capable of humidity conditioning, and absorbing and decomposing of VOCs that cause sick building syndrome, which helps maintain a pleasant living environment.

31  Basic magnesium sulfate  
A. MOS-HIGE® A  
B. MOS-HIGE® Hybrid  
Ube Material Industries, Ltd.

A. Applications: Resin filler, replacement for asbestos  
Features: Reduces the weight of automotive PP resin components  
B. Applications: Treat waste water generated by chemical mechanical polishing (CMP) process  
Features: Recycles and treats CMP-related wastewater.

32  Exhaust gas processing agent  
Calbreed® SII  
Sorbalit  
Ube Material Industries, Ltd.

Applications: Removal of toxic materials contained in exhaust gas  
Features: Exhaust gas treatment agent to improve ability to absorb toxic acid gases emitted during incineration of industrial waste. Used at municipal waste disposal facilities, etc.

33  Soil stabilizer  
A. Super Green Lime\*  
B. Green Lime LS  
C. Green Lime LG  
D. Green Lime LC-E  
Ube Material Industries, Ltd.

Applications: Soil stabilizer  
A. Features: Teflon-coated, lime-based soil stabilizer that does not spread dust during construction.  
B. Features: Original quicklime-based soil stabilizer that does not contain cement.  
C. Features: Original slaked lime-based soil stabilizer that controls dust generation.  
D. Features: Original soil stabilizer made from quicklime and cement, suitable for a wide variety of soil types.



### Sediment improvement agents **Clear Water\***

Ube Material Industries, Ltd.

Applications: Sediment improvement agent  
Features: Improves water and sediment quality in fish farms, enclosed water areas, etc.



### Dehumidifying material **Karatto-Kaimin®**

Ube Material Industries, Ltd.

Applications: Dehumidifying material for clothes and mattresses  
Features: As the main component is Type-B silica gel, capable of being used repetitively after drying in the sun.

## Machinery & Metal Products



### Aluminum wheels **Squeeze-cast aluminum wheels**

Aluminum Wheel Div.

Applications: Automotive wheels  
Features: Achieves a 10-20% weight reduction from conventional casting models, leading to higher energy efficiency. Used as genuine wheels for luxury cars (sedans, SUVs) and hybrid cars of Japanese and other auto makers.



### Billets (steel ingots for rolling)

Ube Steel Co., Ltd.

Applications: Steel material for rolling to produce shaped steel, bar steel, wire rods, etc.  
Features: Manufactured in an electric furnace under a process that recycles steel resources. Environmentally friendly, recycled product that use scrap (main material), as well as industrial waste (e.g., waste plastics), as raw materials and fuels.



### Injection molding machine (All-electric IM)

Ube Machinery Corporation, Ltd.

Applications: Molding machine for car and home appliance plastics  
Features: This all-electric machine can achieve substantial reduction in energy consumption compared to its hydraulic counterparts.



### Homogenizer **Fuel conditioner**

Fukushima, Ltd.

Applications: Equipment to reduce sludge contained in heavy fuel oil for vessel engines by 70-80%.  
Features: This specially designed equipment uses ultrasound to convert engine sludge—which causes air-polluting soot and abrasion of engine components—into microparticles. The resulting clean heavy oil can be combusted without extra process to power vessels.



### Biomass-fueled water boiler **Binder Boiler**

Ube Techno Eng. Co., Ltd.

Applications: Water boiler using various types of biomass as fuel  
Features: Boiler that can operate with a wide variety of biomass fuels (e.g., wood pellets, wood chips, and animal excrement).



### Energy-saving grab bucket

Fukushima, Ltd.

Applications: Grab bucket used at waste disposal facilities  
Features: Reduces greenhouse gas (CO<sub>2</sub>) emissions by about 28% compared to the conventional fixed pump type.



### Facility to improve water quality with micro-bubble ozone **MBO3**

Ube Techno Eng. Co., Ltd.

Applications: Decolorization, sterilization of wastewater and reduction of sewage sludge volume  
Features: With micro-bubble ozone, decolorizes and sterilizes wastewater and reduces the volume of sewage sludge effectively.

## Energy & Environment



### Pressurized two-stage gasification process **EUP**

EUP Business Unit

Applications: Chemical recycling of waste plastics  
Features: The world's first commercial chemical recycling technology that turns organic waste into gas. Specifically, produces synthesis gas products out of waste plastics. Joint development with Ebara Corporation.



### Facility to produce biomass fuel for power plants

Power Business Unit

Applications: Dry and grind wood biomass (e.g., waste construction materials) at a dedicated grinding mill so as to use it in co-firing with coal in a pulverized coal boiler  
Features: With a high co-firing ratio (9%, caloric base), achieves a 100,000-ton annual reduction of CO<sub>2</sub> emissions at UBE's IPP power generation plant.

\* indicates an example for application.

# Third-Party Verification and Opinion

In July 2008, UBE received third-party verification on this CSR Report from the Responsible Care Verification Center. This was the third time we have had the CSR Report verified. We will further improve the quality and content of our future CSR Reports in reference to the feedback the Center provided us with in their verification questionnaire and their written opinion regarding the verification results.



## UBE Group CSR Report 2008 Third-Party Verification—Written Opinion

July 31, 2008

Hiroaki Tamura  
President & Representative Director  
Ube Industries, Ltd.

Akio Yamamoto  
Chairman, Verification Advisory Committee  
Japan Responsible Care Council

Saburo Nakata  
Chief Director, Responsible Care  
Verification Center

### Objectives of Verification

The Responsible Care Verification Center verified *UBE Group CSR Report 2008* created by Ube Industries, Ltd. (hereinafter, "the CSR Report") to give its opinion regarding the following items in the capacity of an expert in the chemical industry:

- 1) Rationality and accuracy of the method used to calculate and tabulate the performance indicators (numerical data)
- 2) Accuracy of the information other than numerical data provided in the CSR Report
- 3) Performance of Responsible Care (RC) activities
- 4) Characteristics of the CSR Report

### Verification Procedures

- The Center staff visited the head office of Ube Industries and asked questions to check the rationale of the method the company employed to compile numerical data reported from each of its sites (offices and plants) and to check the accuracy of information provided in the CSR Report. Employees in charge of relevant business operations and those in charge of creating the CSR Report answered questions of the Center staff and presented and made explanations in regard to the evidence materials.
- The Center staff also visited the Ube Chemical Factory and asked questions to check the rationale of the method the sites employed to calculate the numerical data reported to the head office and the accuracy of the numerical data and other information provided in the CSR Report. Employees in charge of relevant business operations and those in charge of preparing the CSR Report at the Factory answered questions of the Center staff and presented and made explanations in regard to the evidence materials. The Center staff also checked the consistency of the verifying items with the evidence materials.
- The Center used the sampling method to verify the numerical data and other information contained in the CSR Report.

### Opinions

- 1) Rationale of the method used to calculate and tabulate the performance indicators and accuracy of the numerical data
  - Both the head office and the Ube Chemical Factory calculated and tabulated the performance indicators in a rational manner.
  - According to the results of the verification survey, the numerical data was calculated and tabulated in an accurate manner.
  - The Center recommends the data tabulation at the Ube Chemical Factory be improved so that the factory's data can be traced by item not only at the factory level, but at the departmental level, which is the basic unit for data calculation.
- 2) Accuracy of information contained in the CSR Report
  - The information published in the CSR Report was accurate. The Center pointed out that some of the expressions used in the draft CSR Report were not appropriate or easy to understand, and corrections were thus made. As a result, as for the final CSR Report, there were no such serious problems.
- 3) Performance of the Responsible Care (RC) activities
  - The Center commends that the company made steady improvement in the airborne emissions of chemical substances, the volume of industrial waste final disposal, volume of waste recycled, and other initiatives, while it would like to see further improvement in the reduction of CO<sub>2</sub> emissions.
  - It is also appreciable that the Ube Chemical Factory strives to improve its RC activities. Examples include that the Factory has an odor monitoring system in place, resulting in substantial reduction of the number of odor-related complaints received. The Factory also carries out a human error prevention program with the use of Sheets to Prevent Careless Errors, and implements employee training under the site-oriented "Terakoya" style, emphasizing on hands-on experiences.
- 4) Characteristics of the CSR Report
  - The Company aims to communicate its top management's message in an easy-to-understand manner by featuring dialogues with Kazuma Yamane.
  - The Company defines target readers for each reporting item and accommodates the reporting layout and wording accordingly.
  - The Company organizes meetings to explain the CSR Report to employees. From this year, it also plans to distribute copies of the CSR Report to all its employees.

# Third Party Comments from an Expert

The UBE Group invited and obtained comments on its CSR report from an expert to provide more objectivity to the report and to identify new CSR challenges. We intend to incorporate comments received into our future CSR reporting and activities.

## Recommending Even More Active Communication to Stakeholders

### Junko Nagata

Associate Professor, Graduate School for Creative Cities,  
Osaka City University

After reading *UBE Group CSR Report 2008* (the Report), I was impressed with the Group's commitment to fulfilling responsibilities to society through business. As CSR is a relatively new term in Japan, many people tend to think CSR is about regulatory compliance or social contribution programs.

What CSR really means, however, is not only about meeting applicable regulatory requirements, but performing business activities which lead to sustainable development in an economic, social, and environmental sense, and thus helping solve social issues. Whether the word CSR in particular is used or not, companies are always expected to make positive contributions to society, e.g., by pursuing social goals and meeting public expectations. Given this, how companies practice CSR activities in their normal course of business is the key.

I welcome the idea that the Group intends to integrate social and environmental considerations into its regular business concerns, many examples of which can be found in the Report, such as the CDM project in Thailand, development of Heliofresh and other various environmentally conscious products, and efforts to reduce environmental impact of its manufacturing process (e.g., aiming to achieve greenhouse gas emission targets by 2009, which is earlier than planned). The goal of "creating a society full of dreams and hopes through the power of chemistry," as discussed in the "Message from the President" section also resonates with me.

Among the Group's social contribution activities, I am particularly appreciative of its chemistry-focused educational programs, in which the Group can leverage its specialty to provide hands-on experience to learn the joy of chemistry and address the issue of the declining popularity of science among today's students.

The Group has declared and has been working to strengthen CSR activities since 2006. Future reports could be improved by including more information and messages that facilitate two-way communication, rather than just introducing the Group's CSR-related systems, programs, and performance. CSR reports are, after all, reports for communication. Possible additional items would include messages (expectations) from a variety of stakeholders and the Group's responses, achievements and progress of CSR activities over years, new initiatives, and future steps. The overall tone of the current reporting seems somewhat low-key to me. I look forward to seeing more aggressive messages from the UBE Group in the future.

### Junko Nagata

Specialist in public management (including CSR). Her wide-ranging activities include serving as a member of advisory and study panels of national and local governments, such as the Ministry of Education, Culture, Sports, Science and Technology, and the City of Osaka, as well as providing lectures at leadership training seminars by Kansai Association of Corporate Executives and supporting many corporations as an CSR strategy advisor.

Her official website: <http://junko-nagata.com/>



## Response to the Third Party Comments

In addition to third party comments from experts as in previous reports, we have decided to include our responses to such comments from this year in hopes of facilitating more active two-way communication. In the capacity of the chief editor of the Report, I would like to make the following comments:

We were greatly encouraged by Ms. Nagata's recognition of the Group's commitment to fulfilling responsibilities to society through its business. As discussed in the Report, CSR activities at the UBE Group are guided by a basic policy: the fulfillment of CSR as an integral part of its management. Going forward, we will also promote our CSR activities based on the idea that corporate social responsibility is to perform business activities that lead to sustainable development in an economic, social, and environmental sense, and thus helping solve social issues.

With regard to the recommendation for improvement to become a better communicative report, I believe the dialogues between Kazuma Yamane and our President in the beginning of the Report provides a clear picture of who we are and where we are in an easy-to-understand manner. However, reporting in the remaining sections might be more or

less unilateral as a result of our desire to let the readers know as much as possible about the Group's current CSR performance and efforts. In addition, additional external comments could have been included in the Reports. With regard to another finding about a low-key style across the report, including the reporting on future steps, such a low-key report may be an honest account of where we are, or it may reflect our down-to-earth, unpretentious culture. We are planning to intensify our CSR activities, including more aggressive steps to mitigate global warming, and we will also work harder to reach out to our report readers more effectively.

We publish CSR reports based on our belief that it is the UBE Group's responsibility to disclose its past performance, present status, and future plans to all its stakeholders and gain their understanding and support. Received comments will be incorporated into both our future operations and our reporting in fiscal 2009.

Kazuhiko Okada  
Director in Charge of Group CSR,  
Vice-President and Executive Officer

Wings of technology  
Spirit of innovation

**UBE**

## Ube Industries, Ltd.

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