

# CSR REPORT



2008  
CSR Report

Corporate Social Responsibility

**ZEON CORPORATION**

# Message

## Introducing the 2008 CSR Report

ZEON Corporation's 3-year mid-term management plan known as PZ-3 which commenced in 2005 acknowledged the importance of CSR\*<sup>1</sup> (Corporate Social Responsibility) and the company is working to establish and spread CSR principles across the entire ZEON group.

The final year of the three-year plan, 2007, saw a focus on making "quality improvement" a key pillar within the company's CSR activities. Quality at ZEON Corporation means more than just product quality and the company is working to improve the quality of all of its activities.

Flexible structures and mechanisms allow us to satisfy the demands and expectations of shareholders and other stakeholders\*<sup>2</sup> associated with the ZEON group, while continuing to contribute to a wider society through our core areas of business.

September 2008

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### Report Policy

This activity report was created in line with the following basic policy.

- (1) The number of photographs and comments from individuals were increased to enhance the message conveyed to employees.
- (2) We will commission an independent verification by the JRCC (Japan Responsible Care Council) to receive an evaluation of Zeon's activities from a third party perspective.
- (3) This activity report is issued annually.

### Organizations Covered

ZEON and the following subsidiaries and affiliates are included

**Japan:** ZEON Kasei Co., Ltd., ZEON Polymix Co., Ltd., Optes Inc., ZEON Chemicals Yonezawa Co., Ltd., ZEON Logistical Materials Co., Ltd., RIMTEC Corp., Tokyo Zairyo Co., Ltd., ZEON Environmental Materials Co., Ltd., ZEON Medical Inc., ZEON Yamaguchi Co., Ltd., ZEON North Co., Ltd., Okayama Butadiene Co., Ltd.

**Overseas:** ZEON Chemicals LP. (USA), ZEON Chemicals Europe Ltd. (UK), ZEON Chemicals Thailand Co., Ltd. (Thailand), ZEON Advanced Polymix Co., Ltd. (Thailand)

### Period Covered

April 2007 to March 2008 (also includes some new information from April 2008 and later)

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\*1 CSR is an abbreviation for "Corporate Social Responsibility".

\*2 All parties with business interests or concerns associated with the ZEON group.

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Head Office (Shin-Marunouchi Center Building)

# President's Message

Our corporate name ZEON is an amalgamation of the Greek words "GEO" (meaning the "EARTH") and "EON" (meaning "ETERNITY"). It represents a direct statement of our corporate mission.



The management of ZEON made a strong and public commitment to CSR in our 3-year mid-term management plan for 2005 to 2007 (PZ-3) and we have been working to improve corporate value.

This philosophy has been carried over emphatically to our new three-year plan.

As we approach the 60th anniversary of our founding in 2010, we have established a new three-year plan entitled "Innovation ZEON-60 (IZ-60)". The plan positions us as a "chemical company able to contribute to society by supplying products that delight our customers around the world in a speedy manner" based on advanced innovation.

With an awareness that companies are social organizations and based on our obligations as a manufacturer to take CSR seriously, ensure compliance with regulations and put safety first, our aim is to manufacture products and operate factories in an environmentally friendly manner so as to build value that will delight both the general public and our customers.

To help sustain the global environment, our corporate mission is to contribute to society by

"being a company that makes a positive contribution to the preservation of the earth and the prosperity of the human race" through products that help the environment by being energy efficient, solvent-free, and with reduced environmental risks.

Some specific examples of this from one of our key products, synthetic rubber, include the development of rubber for fuel-efficient tires and improvements in the performance of functional rubbers that help deliver better engine combustion efficiency.

The development of synthetic rubber latex suitable for use in gloves that eliminates the problem of protein allergy that was a problem with conventional gloves produced using natural rubber latex is an example of a product that helps people. Similarly, the excellent low-temperature adhesion performance of our "Zeoglobule<sup>®</sup>" polymerized toner helps reduce power consumption in copiers.

The excellent optical characteristics of the "ZEONOR<sup>®</sup>" and "ZEONEX<sup>®</sup>" cycloolefin polymer products help to improve the energy efficiency of LCD TVs and make them even thinner. The environmentally friendly characteristics of these products is demonstrated by their use in applications such as in medical containers and equipment and in the substrates for organic EL, the next-generation energy-efficient lighting technology described at the Toyako Environmental Summit.

"ZEONOR Film<sup>®</sup>" received the "Second Monodzukuri Nippon Grand Award" awarded by the Minister of Economy, Trade and Industry and this ground-breaking new method of producing optical film by molten extrusion without the use of solvents has made a significant contribution to the environment. Similarly, products such as the "Zeorora<sup>®</sup>" semiconductor etching gas that won the Stratospheric Ozone Protection Award in the US also help mitigate environmental risks.

The factories that produce these products operate safely and securely and undertake Responsible Care activities so that the public and our customers can have even more confidence in ZEON than in the past.

Our aim is to uphold sincerely the values and ethics required of a corporate member of society, not just those obligations imposed by regulation, and by so doing meet the demands and expectations of all our stakeholders, including the local community, customers, and shareholders, by maintaining fair business practices and conducting our business in harmony with the local community and the general public, and fulfill our corporate mission to "make a positive contribution to the preservation of the earth and the prosperity of the human race".

Finally, I would like to take this opportunity to say thank you for reading this report and we welcome your opinions and suggestions.

September 2008

Naozumi Furukawa  
President and CEO

古河直純

# ZEON makes an important contribution to society with unique technology

ZEON boasts a world-beating range of products including special synthetic rubber especially designed for timing belts and other safety-critical components in automobile engines, green note aroma chemicals (leaf alcohol) for perfumes and food flavors, and environmentally-friendly products such as etching gases that do not harm the ozone layer and lightweight, transparent cycloolefin polymer resins.

At ZEON, we strive for innovative and revolutionary new technology and continuous improvement in our core strengths. Our ultimate aim is to establish a leading presence in society.



## ZEON's Business Sectors

### Elastomer Business

- **Synthetic Rubber**  
Styrene-butadiene rubber, butadiene rubber, isoprene rubber, high-styrene rubber, acrylonitrile-butadiene rubber, acrylic rubber, epichlorohydrin rubber, hydrogenated nitrile rubber, carbon master batch, etc.
- **Synthetic Latex**  
Styrene-butadiene latex, butadiene latex, acrylonitrile-butadiene latex, acrylate latex
- **Chemical Products**  
C5 petroleum resin, thermoplastic elastomer SIS, concrete fluidizer, water-based dispersing agent, epoxy hardener, etc.



Timing belt using synthetic rubber



Gloves using synthetic latex

Gaskets

### Specialty Material Business

- **Chemicals**  
Aroma chemicals, organic synthesis chemicals
- **Information Materials**  
Photoresist, etching gas, toner products, binder resin for electromagnetic tape, etc.
- **Specialty Plastics**  
Cycloolefin polymers and processed products



Cycloolefin polymer



Raw film



Cellular phone using specialty plastics



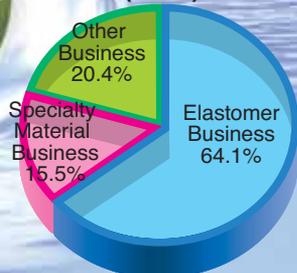
Perfumes using aroma chemicals

## Company Profile

- **Company name** Nippon Zeon Co., Ltd.  
(ZEON CORPORATION)
- **Established** April 12, 1950
- **Capital** 24.2 billion Yen (as of March 31 2008)
- **Employees** 1,968 (as of March 31 2008)
- **Description of Business**
  - Elastomer Business**  
Manufacture and sale of synthetic rubber, synthetic latex, and chemical products
  - Specialty Material Business**  
Manufacture and sale of fine chemical products, information materials, and specialty materials, etc.
  - Other Businesses** (including ZEON group businesses)  
RIM combination liquid/molded items, medical equipment materials, butadiene extraction technology, vinyl chloride compounds, packaging and distribution materials, and building materials, etc.
- **Head office** Shin-Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-8246 Japan  
TEL:03(3216)1772 (reception)  
FAX:03(3216)0501

### Other Businesses

Sales Share (2007)



### Other Businesses

- **RIM**  
Combined septic tank, building equipment components, RIM (Reaction Injection Molding) combination liquid, construction and agricultural equipment components, game console cases, etc.
- **Medical Devices**  
Various therapeutic catheters, etc.
- **Other Products**  
Vinyl chloride compounds, butadiene extraction technology, isoprene extraction technology, butane-1 extraction technology, synthetic rubber and latex manufacturing technology, packaging and distribution materials, building and construction materials



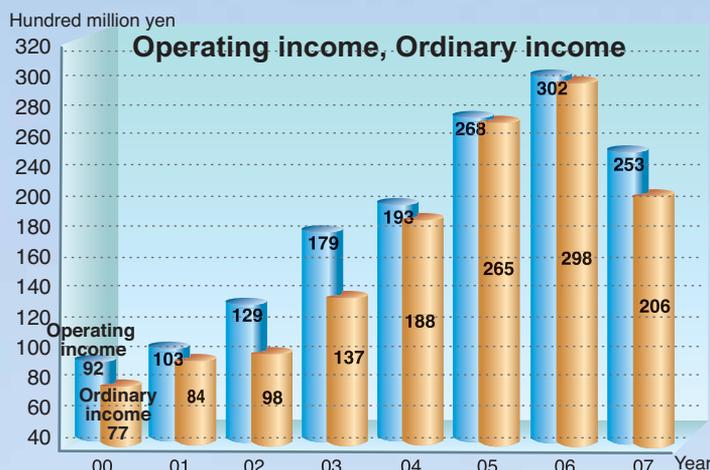
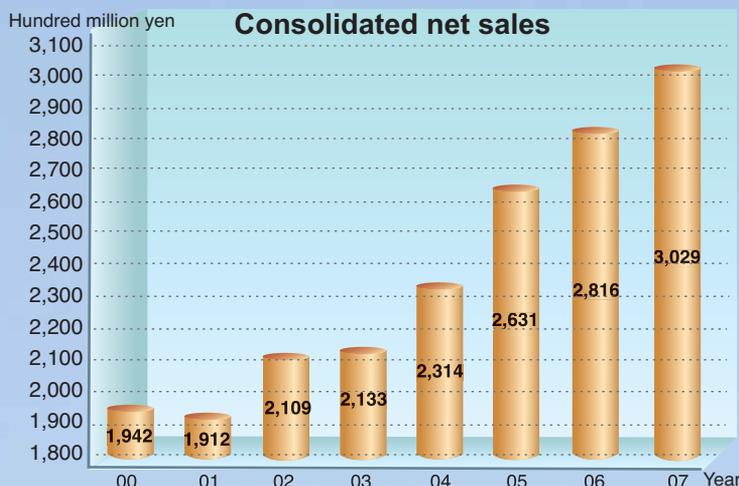
Construction equipment exterior covering made by RIM (Reaction Injection Molding)



Returnable metal box pallet



Medical equipment (IABP balloon)



# Corporate Philosophy and CSR Strategies

**"ZEON will contribute to the preservation of the Earth and the prosperity of the human race."**



## CSR Strategies

Recognizing our role as a social organization, we aim to be a company that is trusted by society and of which its employee can be proud.



## ZEON's 7 Articles

**Article 1** ZEON embraces corporate ethics and acts as a socially responsible organization.

**Article 2** ZEON values the environment and safety.

**Article 3** ZEON contributes to society with innovative technology.

**Article 4** ZEON delivers products that satisfy the customers.

**Article 5** ZEON values an organization that makes the best use of individuals.

**Article 6** ZEON overcomes challenges through full participation and distributes the benefits fairly.

**Article 7** ZEON values speed of decision-making and delivery date of work.

# Environment Philosophy and Safety Philosophy

## Environment Philosophy and Safety Philosophy

### Environment Philosophy

- 1.Environmental protection is a mission for socially responsible organizations.
- 2.Our basic belief is that environmental protection can be achieved with innovative technology.
- 3.Environmental protection will be achieved when all employees work together with a sense of mission to overcome challenges.

### Safety Philosophy

- 1.Safety is the foundation of all business activities and the greatest priority.
- 2.Our basic belief regarding safety is that we can prevent all accidents.
- 3.Safety will be achieved by performing the 5S\* and when everyone takes responsibility for their own actions.

\*5S: Seiri (neatness), Seiton (order), Seisou (cleanliness), Seiketsu (hygiene), and Shitsuke (discipline)

## \*Responsible Care Policy

### 1.Prioritize the environment and safety

Protecting the environment and ensuring safety are preconditions for all business activities and are the most important priorities. We will work continuously to enact full accident prevention countermeasures, and provide education and training for all employees to prevent safety and environmental accidents.

### 2.Collect and distribute the latest information on chemical products

We will collect, store and manage the latest information required for the appropriate handling, use and disposal of chemical products, and distribute this information to employees and users.

### 3.Minimize the discharge of toxic chemicals and waste

We will work to reduce the discharge of toxic chemicals, minimize waste, and develop technology for recycling and reusing materials.

### 4. Promote activities for conserving resources and energy

We will aim to dramatically reduce the amount of energy we use and help alleviate global warming by developing innovative technology and actively promoting resource and energy conservation activities that involve all employees.

### 5.Take the environment and safety into account when developing new processes and products and performing quality assurance

We will perform thorough environmental and

safety evaluations from the initial stages of research, develop technology and products that take the environment and safety into account, and work to maintain and improve the quality of our technology and products.

### 6.Live together with society

We will strictly observe regulations related to the environment and safety, whether the regulations come from the local community, the national government, overseas, or organizations to which we belong. While cooperating in these activities, we will work to enhance our communication with the local community and society in order to receive a better understanding of ZEON's activities and further strengthen the trust that society has in our company.

### 7.Perform continuous improvements

We will continuously improve our environment safety management and technology by operating a Responsible Care Audit, a Safety Management System, an Environment Management System based on ISO14001, and an Occupational Health and Safety Management System.

### \*Responsible care

Activities undertaken voluntarily by companies involved with chemical substances to maintain the "environment, safety, and health" in all processes from the development of chemical substances through to their production, distribution, use and disposal via their ultimate end use, and to make public the results of these activities and enter into dialogue and communication with the public.

# Corporate Governance and Internal Controls

Seeking to be a "company trusted by all stakeholders", we are committed to thoroughly implementing compliance management.

## Our Basic Philosophy Regarding Corporate Governance

The company focuses on increasing profits and constantly aiming to enhance its corporate value while balancing various interests, focusing on the shareholders and other diverse stakeholders. To achieve this, we have continued to put effort into corporate governance, building a system to allow efficient and sound corporate management.

In addition, by establishing an internal controls system, we are clarifying the functions and roles of each organization within the company, enabling speedy decision-making and implementation. We are also conducting appropriate monitoring and information disclosure in respect of the progress and outcomes of our activities to improve business transparency. In order to carry out these functions effectively, we are determined to enhance our corporate governance system.

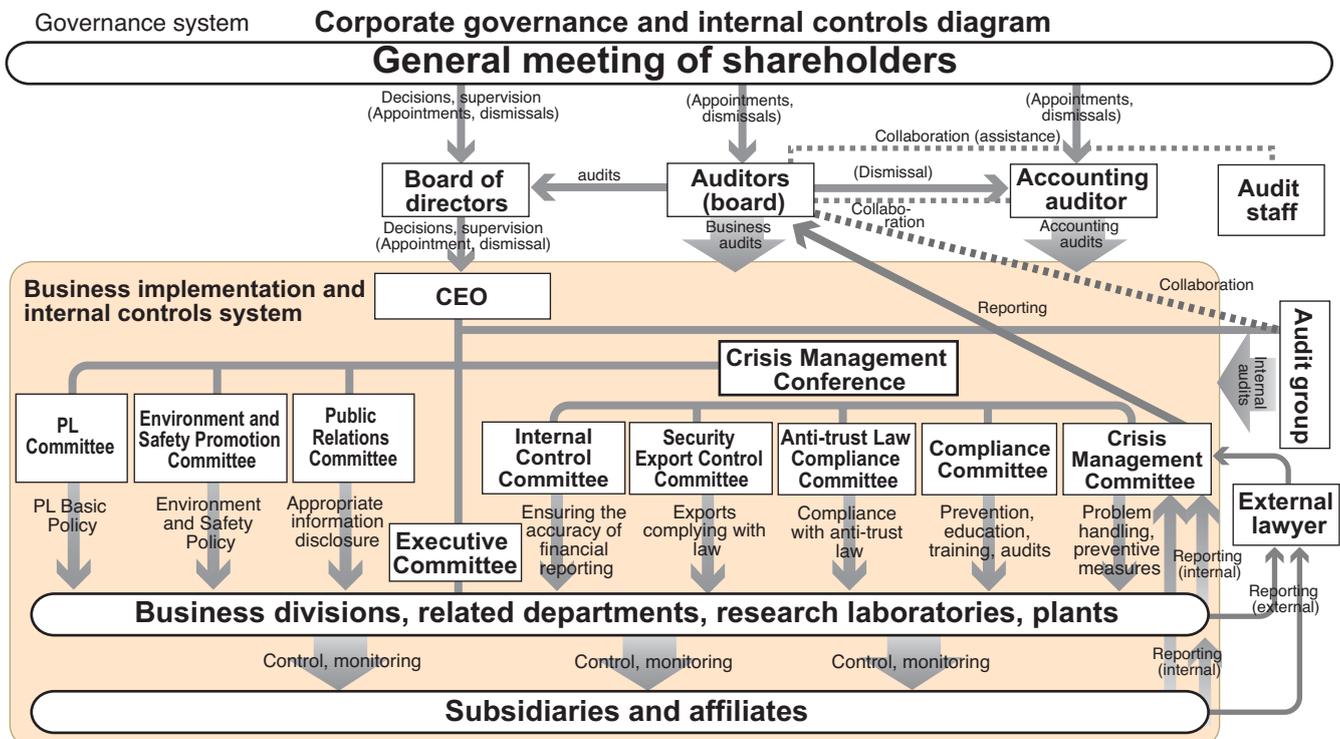
## Internal controls system

A "Basic Policy for Implementing an Internal Controls System" was authorised at the directors' meeting in April 28, 2006 and a decision to add the policy was made at the directors' meeting on March 26, 2008 based on subsequent progress in implementing the internal controls system.

In accordance with this basic policy, a "corporate governance and internal controls system" was created and activities are underway throughout the ZEON group aimed at ensuring rigorous risk management and compliance with regulations.

## Introduction of the operating officers structure

The operating officers group structure was set up on June 28, 2007 in a bid to improve management efficiency and speed up executive operations.



### Strengthening the Risk Management and Compliance System

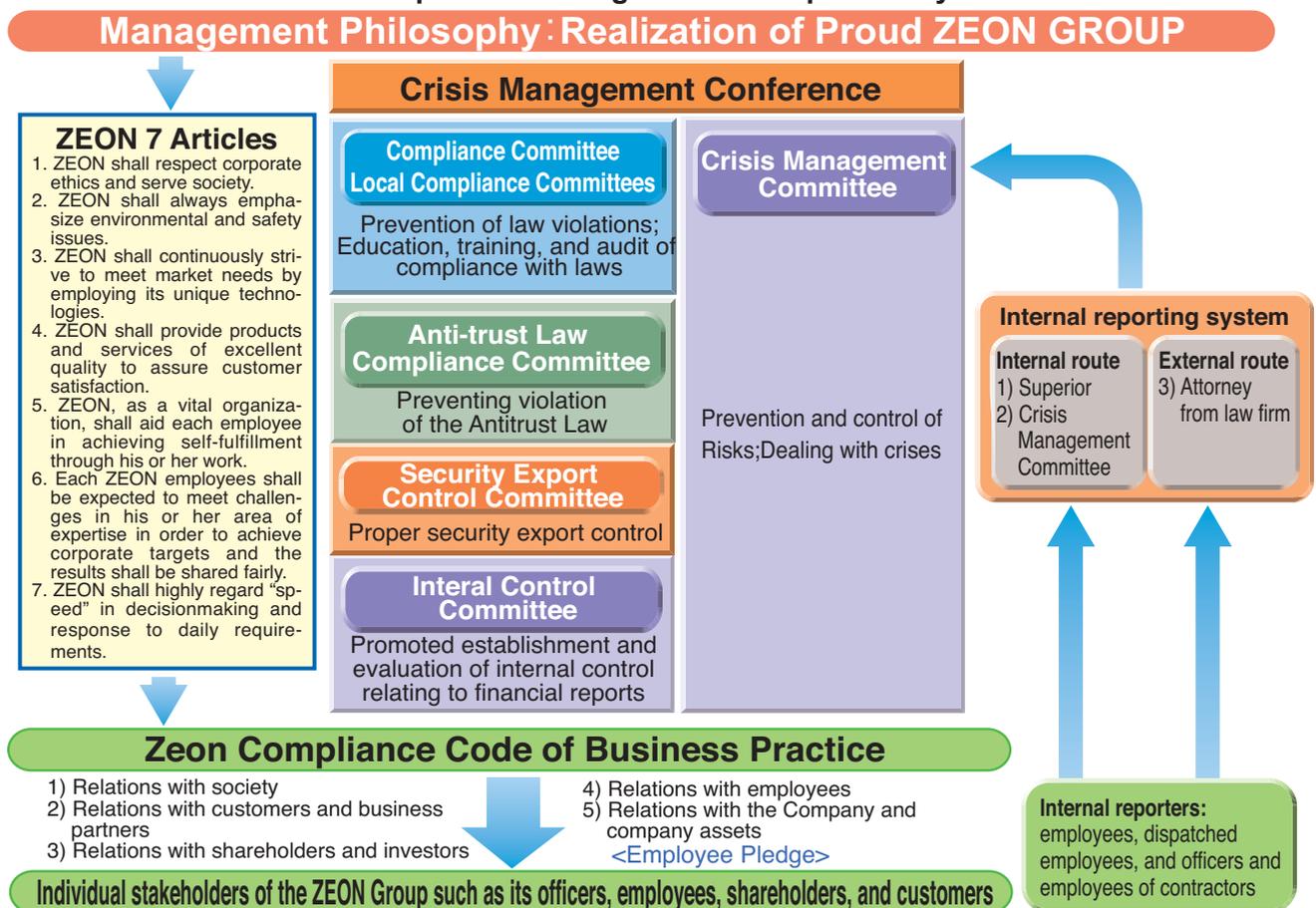
Work on risk management and compliance activities in the ZEON group is currently progressing primarily through five committees. These include the “Crisis Management”, “Compliance” and “Anti-trust Compliance” committees that were set up under the “Crisis Management Conference” chaired by the President, and also the “Security Export Control” and “Internal Control” standing committees of the Crisis Management Conference which were added in 2007 and 2008 to strengthen further the risk management and compliance system.

- The Crisis Management Committee is responsible for controlling potential risks and handling actual incidents when it occurs at the company, as well as implementing measures to prevent its recurrence. The committee dealt with such incidents in 2007 and preventive measures were put in place. The internal reporting system was utilized for some of these incidents.
- The Compliance Committee is the body in charge of education, training and auditing activities to prevent violations of laws and regulations. In 2007, numerous

training sessions were held covering compliance in various workplaces and a (second) e-learning based test of understanding of compliance issues was carried out. It aims to increase further the awareness of compliance issues amongst the ZEON group executives and employees.

- The Anti-trust Law Compliance Committee is the body established to prevent any breaches of anti-trust law by executives or employees of ZEON and ZEON group. Numerous price changes were made during 2007 in response to the rising cost of oil, and the committee performed strict assessments of these changes before they were put in place.
- The Security Export Control Committee is the body responsible for ensuring that export-related laws and regulations are complied with and applied appropriately. Activities in 2007 included dealing with amendments to the Export Trade Control Ordinance and change procedures for internal company rules.
- Internal Control Committee (started in June 2008) aims to establish and review internal controls relating to financial reporting and administer the company’s internal report regulated by the Financial Instruments and Exchange Law.

### ZEON Group's Risk Management / Compliance System



Message  
Management  
Performance  
Site Reports

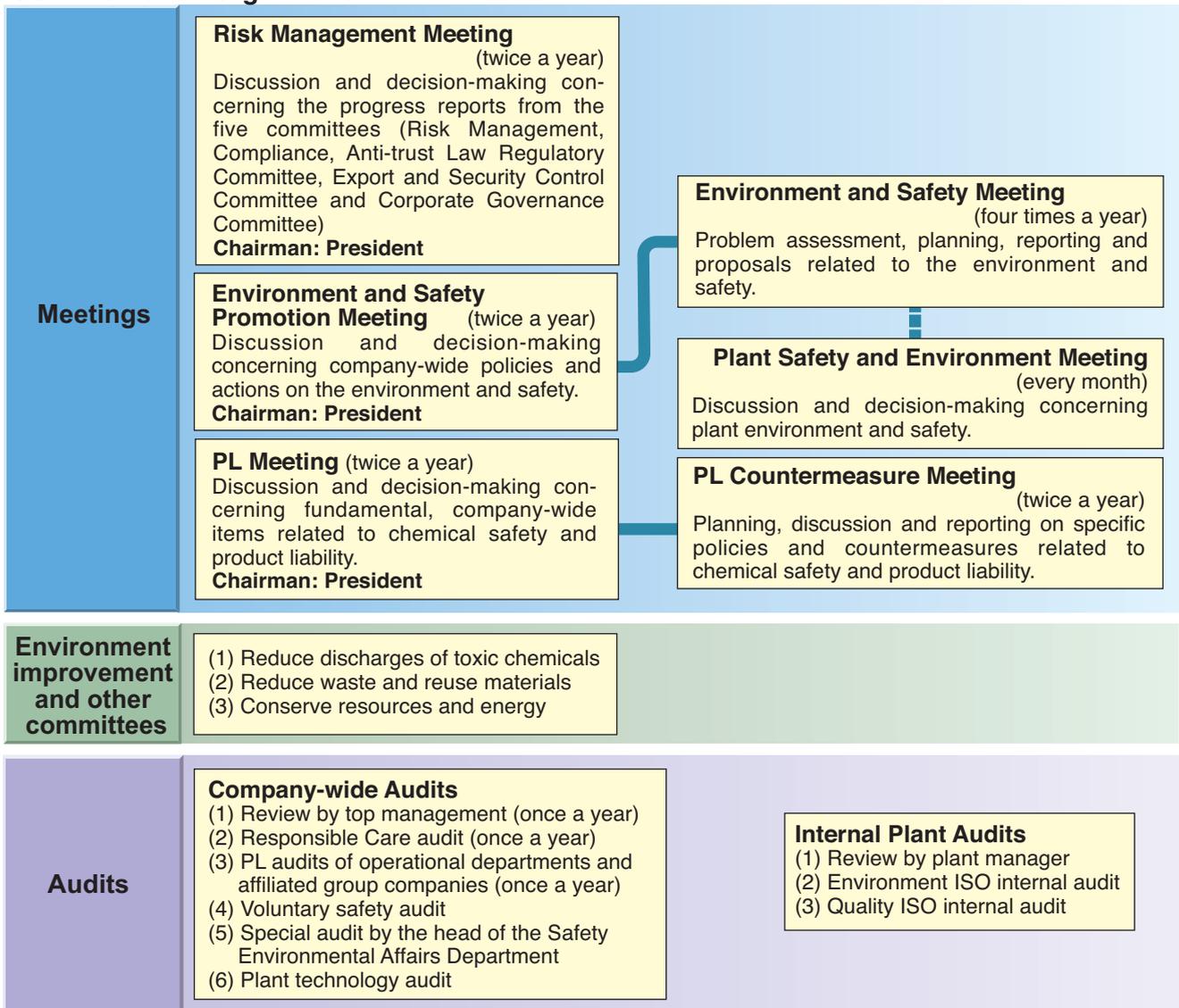
# CSR Promotion Organization

A CSR Coordination Division was established to oversee the company's social responsibilities as part of organizational changes that occurred in June 2008.

CSR Promotion System



CSR Promotion Organization



# Relationship with Shareholders and Other Investors

## Relationship with Shareholders and Other Investors

### Communication with Institutional Investors and Analysts

We respond positively to media coverage and visits by institutional investors and analysts from both within Japan and abroad. ZEON held briefing sessions for analysts in May and November 2007. In addition to a review of financial results, these involved top management reporting on progress on PZ-3, our 3-year mid-term management plan.

In October 2007, ZEON held a factory inspection tour based at our new optical film production facility that had recently been completed (in September) at Himi in Toyama Prefecture. The tour was attended by 47 analysts.

### Communication with shareholders

To make it easier for shareholders to understand our business, on the day of the annual general meeting we stage an exhibition that includes staff giving explanations and display panels and other presentations showing actual commercial products or models of products that use our manufactured goods.

On our web site, we have also posted a video of the



Introduction to products following the annual shareholders' meeting

progress report on our PZ-3 3-year medium-term management plan that was presented at the analyst briefing sessions. (Currently we are showing an explanation of our new IZ-60 3-year medium-term management plan that was announced in May 2008.)

During April 2008 we went on-line with an upgrade to our web site that features a new shareholders' meeting page in the IR Information section of the site. The new page includes video of the reporting part of the annual general meeting.

## Comprehensive upgrade to our web site goes on-line with a strong emphasis on CSR

Living as we now do in a world where use of the internet is part of our daily lives, the new site introduced a design that was devised based on looking at the site from a user's perspective and produced with an emphasis on "accessibility" (whether the web site is able to be used by as many people as possible including the elderly and disabled) and "usability". The fully upgraded site went on-line on April 1 2008.

A typical example of how accessibility was considered in the design is a feature whereby the text on the site can be switched between either standard or enlarged size to ensure readability.

To improve usability, representative images have been included to indicated the category of information and to help the user recognize which part of the site they are looking at. Also, the navigation and other assistance that appears on the right of the screen is hidden when printing to ensure the printout can fit on A4 size paper, and a

print button has been added on those pages that users are most likely to print.

Whereas our previous web site was limited to posting our CSR report (as a PDF file), the new upgraded

site includes a new CSR activities section that summarizes our CSR activities with separate pages covering our CSR Strategy, Environmental Philosophy and Safety Philosophy, CSR Framework, Eco-friendly Product Development, and Quality Assurance Mechanisms.



[Web] CSR activities site  
<http://www.zeon.co.jp/csr/index.html>

# Relationship with Customers

## Quality Assurance

Article 4 of "ZEON's Seven Articles" states that "ZEON delivers products that satisfy our customers". We put this into practice by providing a reliable supply of products that satisfy our customers.

### Quality Management

We are working to strengthen the links between the plants, operational departments and research units (R&D Center) in order to improve quality management on a company-wide basis and create an integrated organization for production, sales and technology.

The Quality Assurance Department at head office maintains close communication with the quality assurance units at the plants in order to solve any issues that arise at the plants. The Quality Assurance Department works to resolve issues from a customer perspective by identifying the causes of defects and evaluating the suitability of countermeasures in order to reduce any ongoing problems in production processes that have the potential to lead to claims affecting production sites across the group with the ultimate aim of reducing customer claims to zero.

### Quality Assurance Mechanisms

In order to ensure the reliable supply of high-quality products to our customers, we have implemented various quality assurance mechanisms based on the ISO9001:2000 international standard for quality management systems.

### Status of ISO9001 Accreditation

At ZEON, all four plants and the operational departments (polymer departments and specialty materials departments) are already certified under ISO9001.

At our affiliates, ISO9001 certification registration has been performed primarily for production departments. Further, some affiliates have undertaken combined audits that include assessment under ISO14001 (environment management systems) as they move to adopt comprehensive management systems.

Quality management that links production, sales and technology



### Main mechanisms supporting quality assurance at ZEON

Mechanism	Objective
Mechanism for developing policy	Mechanism for identifying the issues at each organizational layer based on the President's policy, and then carrying out the required measures.
Mechanism for management planning and review	Mechanism for continuous improvement in the organization's quality management whereby unit managers (plant managers and operational department heads) evaluate the level of achievement in relation to the issues in each organizational layer and identify strategies for the next round of improvements.
Design reviews for the design and development of products	Mechanism for reviewing whether each stage of the product design and development process is being performed appropriately.
Mechanism for product safety evaluations	Mechanism for performing a multifaceted safety check for the product in which product safety is evaluated at all stages, from initial research through to product sale and ultimate disposal.
Mechanism for modification management	Mechanism for preventing problems before they occur by establishing rules relating to process modifications associated with product improvements and similar.
Mechanism for dealing with abnormal situations	Mechanism for eliminating quality problems by pinpointing the causes of process abnormalities in production equipment and removing the cause to ensure the problem never recurs.
Mechanism for dealing with complaints	Mechanism for responding quickly and openly to customer complaints and improving quality by preventing recurrence.
Mechanism for internal quality monitoring	Mechanism for internal quality monitoring Mechanism for internal monitoring whereby staff monitor each other to ensure that the company's quality management systems work efficiently and effectively.

### Status of ISO9001 Accreditation at ZEON Corporation

Organization	Registration No.	Registration Date	Date of Latest Update or Reconfirmation
Takaoka Plant	JSAQ012	1994.10	2007.7 (Reconfirmation)
Tokuyama Plant	JSAQ013	1994.10	2007.8 (Reconfirmation)
Kawasaki Plant	JSAQ016	1995.1	2007.11 (Reconfirmation)
Mizushima Plant	JSAQ046	1995.6	2007.5 (Update)
Polymer Departments	JSAQ432	1999.2	2007.11 (Update)
Specialty Materials Departments	JSAQ1972	2004.6	2008.5 (Reconfirmation)

### Status of ISO9001 Accreditation at the ZEON group

Organization	Registration No.	Registration Date	Date of Latest Update or Renewal
ZEON Kasei Co., Ltd.	JET-0424	2001.5	2008.5 (Extension and reconfirmation)
ZEON Polymix Co., Ltd.*	JSAQ793	2000.4	2008.1 (Reconfirmation)
Optes Inc.	Toyama Plant	JQA-Q9271	2002.12
	Sano Plant	JQA-QMA10869	2003.12
ZEON Chemicals Yonezawa Co., Ltd.*	03319-A	2006.6	2008.6 (Reconfirmation)
ZEON Logistical Materials Co., Ltd.	JMAQA-705	2000.7	2008.5 (Reconfirmation)
RIMTEC Corporation	JQA-QMA11709	2004.10	2007.9 (Update)
Tokyo Zairyo Co., Ltd.	JQA-QMA11669	2004.10	2007.10 (Update)
ZEON Medical Co., Ltd.**	SY50117570 0001	2004.4	2008.4 (Reconfirmation)
ZEON North Co., Ltd.*	18713B	2007.1	2007.12 (Reconfirmation)
ZEON Chemicals (ZCLP)	CERT-01747	2000.4	2008.1 (Reconfirmation)
ZEON Chemicals Europe (ZCEL)	FM01982	1989.6	2008.5 (Reconfirmation)
ZEON Chemicals Thailand Co., Ltd. (ZCT)	C2003-02279	2003.9	2007.6 (Reconfirmation)
ZEON Advanced Polymix Co., Ltd. (ZAP)	149044	2004.2	2007.6 (Reconfirmation)

\* Assessment and registration combined with ISO14001

\*\* Assessment and registration combined with ISO13485 (quality management standard for the design, development, production and sales of medical equipment)

## Chemical Products and Product Safety

We make every effort to ensure the safety of products delivered to our customers and chemical substances handled in laboratories and production plants.

### World-wide Product Safety Activities Including Reviewing the Safety of Chemical Substances

We are actively involved in the following research and evaluation programs on hazardous chemical substances, their safety and their effect on the environment, including support through ongoing funding and data sharing.

#### (1) We perform our own safety evaluations through participation in the HPV Initiative.

- A consortium of companies producing hydrocarbon solvents in association with European and American counterparts (HSJP)
- Japan Challenge Program
- \*HPV Initiative: An initiative for assessing the hazards of existing high production volume chemical substances.
- \*Japan Challenge Program: A joint initiative between the Japanese Government and industry for collecting safety information on existing high production volume chemical substances.
- \*HSJP: Hydrocarbon Solvent Japan Panel. The domestic panel of the IHSC (International Hydrocarbon Solvent Consortium)

#### (2) We support research into toxicity evaluation through participation in the LRI.

- \*LRI: Long-range Research Initiative. Research into long-term issues related to the impacts that chemicals may have on human health and the environment.

#### (3) We support investigation into understanding and countering the environmental impact of synthetic rubbers through participation in the Far East subcommittee of IISRP.

- \*IISRP: International Institute of Synthetic Rubber Producers

### Domestic and International Chemical Regulations

In response to the new EU RoHS directive effective July 1 2006 and the introduction of mandatory labeling for designated chemical substances under the Law for Promotion of Effective Utilization of Resources (J-Moss) in Japan, ZEON supplies products that comply with the maximum content limits on heavy metals such as cadmium, lead, mercury and hexavalent chromium, as well as designated toxic chemicals such as bromine-based flame retardants.

Meanwhile, the EU's new REACH law for managing and regulating chemicals came into effect on June 1, 2007 with preliminary registration commencing from June 1, 2008. Although this is an EU law, it requires that safety information on chemical substances be made available across the supply chain which means it is expected to have a large impact outside the EU, including in the area of substance registration. ZEON has been working to review its management of chemical substances and put in place measures to

ensure that chemical safety information is promulgated accurately, including through membership of the Japan Article Management Promotion consortium.

- \*RoHS directive: This stands for the restriction of the use of certain hazardous substances (The directive limits the use of specific toxic substances contained in electrical and electronic products.)
- \*J-Moss: A Japanese industrial standard for labeling (marking) the presence of specific chemical substances in electrical and electronic equipment (JIS C 0952).
- \*REACH law: The Registration, Evaluation, Authorization and Restriction of Chemicals
- \*Japan Article Management Promotion consortium (JAMP)  
JAMP is a consortium of upstream and downstream businesses (manufacturers of materials, parts, finished products, and so on) dedicated to creating concrete frameworks for the administration and disclosure of product chemical content information.

Following an amendment to the Occupational Health and Safety Law (that makes it obligatory to use GHS labeling for specific chemical substances from December 2006), ZEON has modified the labeling on its products and test specimens that are covered by the legislation until May 31, 2007.

- \*GHS: Globally Harmonized System of Classification and Labeling of Chemicals

### Other Initiatives Relating to Chemicals and Product Safety

#### Implementation of Product Safety Reviews

Product safety is reviewed at every stage from initial research through to final product sales using our own checklists to verify the safety of products from various perspectives.

#### MSDS Publication

Information regarding product safety is supplied to customers in the form of MSDSs (Material Safety Data Sheets). ZEON has published



MSDS

MSDSs for all our

products and a portion of waste materials, not just for the hazardous materials required by law (notifiable substances under the Occupational Health and Safety Act, substances specified in the Pollutant Release and Transfer Register (PRTR) Law, and toxic substances under the Poisonous and Deleterious Substance Control Law).

#### Education on Chemical Product Safety

ZEON carries out education on chemical and product safety topics including the notification procedure for new chemical substances and international trends in chemical regulations such as the REACH law.

# Relationship with the Local Community

Our relationship with the local community is also described in the Site reports "Living together with the local community" on page 37 onwards.

## Responsible Care Community Dialogue

### Tokuyama Plant

The "Fourth Shunan Responsible Care Regional Dialogue" (a meeting on environmental protection in the Shunan region attended by 15 companies) was held on November 13, 2007. The meeting was attended by 165 people, most of whom were from local government, and involved a lively exchange of opinions. This was the first time the meeting had included a round-table discussion and resulted in hopes and expectations for involvement in local government activities.



Shunan Community Dialogue



### Television appearances

In October 2007, President Furukawa appeared on the "Maidohaya" television program broadcast by Kita-Nippon Broadcasting in an item entitled "a new factory for the era of terrestrial digital broadcasting" (subtitled: "a new star for ZEON Corporation") where he introduced the new factory and explained the production process for optical film for LCD televisions, spoke of the mission to "make Toyama a leading international production hub", and extolled the virtues of "working at ZEON". President Wakamatsu of Optes Inc. (see page 50) also appeared on the same program where he promoted the excellent quality of his company's optical film.



Scene from the interview (TV image)

### Takaoka Plant

Takaoka Plant participated as an organizing company at the "Fourth RC Community Dialogue" held at Takaoka City, Toyama Prefecture in March 2008. The dialogue was attended by more than 100 people, primarily from local government, and involved updates and presentations on the activities of five companies along with a lively exchange of opinion. (See related article on page 41.)



Community Dialogue with Takaoka in Toyama



Newspaper article on the Chemical Industry

### Joint initiatives with universities (Mizushima Plant)

In December 2007, Mizushima Plant was opened to a site visit from everyone at Kagawa University (Social Science Laboratory, Faculty of Education). Although these factory open days are held several times a year for high school students, this was the first time that university students had been invited. The tour included a visit to the Integrated Production Center (IPC) building that had only just been opened in November. The IPC is a manufacturing facility that allows for fast decision making and implementation with the objective of safe and reliable production and overall optimization. The way the visitors listened intently to the explanation from deputy factory manager Nishijima in the Discussion Room was impressive.



Visitors listen intently to a presentation



Commemorative photograph

# Relationship with Employees

ZEON strives to be a company that inspires pride in each and every employee.

## ~ Relationship with Employees ~ Basic Philosophy



ZEON aims to establish an environment in which employees can set their own lofty goal of "being what we want to be" and in which, to achieve this goal, they can think rigorously, accept challenges, and continue to change. Having set "being what we want to be" as an objective for everyone, ZEON has changed its education and training practices to make them relevant to specific daily activities and not just to filling the gap between this objective and current reality. The results achieved though these activities are evaluated fairly and actioned with the aim that this will lead to further lofty goals.

Improvement in the "workplace strength" across the entire company is the result of the cumulative innovations and improvements achieved by the specific activities of individual employees.

Education and training at ZEON is broadly divided into core education that is targeted at all employees and focuses primarily on raising awareness and acquisition of common knowledge, specialist education for various specific jobs, and on-the-job training conducted in the workplace.

In particular, the curriculum was revised in 2007 to make training not something that occurs on a temporary basis but something that leads to practical changes in the way things are done. Also, to strengthen training for employees who deal with global business, practices were changed to link with the practical areas where work is performed and to take advantage of the results.

### Education for Newly-Appointed Managers

"Improvement in workplace strength" is an organizational requirement in which newly-appointed managers are expected to play a driving role. In the area of training for newly-appointed managers, training covering areas such as awareness raising and required knowledge was conducted for management and at the same time rigorously thought-out specific

action plans were established with the aim of "changing (reforming) ZEON". In addition to managing the progress of these action plans after returning to the workplace, a monthly program of 360 degree multi-faceted performance appraisals were introduced as a tool to support awareness raising and encourage action.

The 360 degree multi-faceted performance appraisals are directed towards the objective of "being what we want to be" and involve providing individuals with feedback through reviews covering 14 categories by other employees at the same, higher, and lower levels of the organization. The aim is to achieve ongoing change in the attitudes and actions of management that will flow out across the entire organization, based on an accurate understanding of one's own current situation.

### [Overview of the education program]

Hierarchy	Leadership training	Training for different levels of the organization	Career design training	Common knowledge training	Self-development	Global employee training	Specialized training	On-the-job training (OJT)
Management	Business leader training	Management	(30/40/50 age ranges)	Environmental safety, quality, production, CSR, compliance, information systems, accounting	Communication training, support for obtaining qualifications	MOT, MBA, overseas study, overseas-derived training courses, TOEIC	Manufacturing, engineering, research, technology, planning	Coordination with off-site training, technology transfer
Subordinate management		Newly appointed management						
Mid-level employees		Subordinate management						
New entrants		Mid-level employees						
		New entrants						

### Global employee training

ZEON has expanded its internal and external training programs for the ongoing training of employees involved in the company's rapid global expansion.

One example is the "English course for training key overseas staff" established in 2007. In addition to English conversation, the curriculum aims to instill practical skills that are immediately useful in specific business situations such as presentation, negotiation and business writing.

### Multi-faceted performance appraisals that change attitudes and actions

The training for newly appointed managers in 2007 involved comprehensive discussion amongst all the participants on each person's action plan for "changing ZEON" which they then vowed to carry out. The subsequent 360 degree multi-faceted performance appraisals involved forthright and provocative feedback from others at the same, higher, and lower levels in the organization and I felt provided me with the opportunity to review my own situation on a monthly basis as I worked through my action plan. For someone like myself who is approaching 40 years of age and hopes to grow in maturity in both the public and personal parts of my life, I am grateful for this challenging training.

**Masahiro Tomono**  
Tokuyama Plant



Message  
Management  
Performance  
Site Reports

# Relationship with Employees

## A human resources system that gives employees a sense of challenge and achievement

ZEON believes that a truly competitive company is the sum of the skills of its employees and we aim to create a human resources system that gives employees a sense of achievement by giving each employee the opportunity to challenge lofty goals, to act on these goals, and to have the outcomes treated fairly, with the entire organization pointing in the same direction.

A bonus scheme linked to corporate results and departmental results helps establish a sense of company unity by encouraging everyone to work together to contribute to company performance.

ZΣ- allowance has been introduced as an incentive for ongoing cost reduction activities.

The severance pay system takes account of performance appraisals over the ten years prior to retirement age and reflects this in the lump sum payment on retirement with the expectation that employees will remain motivated and feel a continuing sense of achievement right up to retirement age.

After retirement, former employees have the opportunity to remain involved with the company by becoming a "ZEON Master" to help pass on skills and train their successors.

### Fair performance assessment system provides a sense of achievement and challenge

An objectives-based performance appraisal system has been introduced with the aim that all employees will challenge lofty goals. Also, annual training is provided both for those doing the assessing and those being assessed so that the appraisals are done in a fair and balanced way.

A particular emphasis is put on giving employees a sense of ownership of the appraisals and the aim is to create a corporate culture overflowing with a sense of achievement and aspiration (a sense of challenge and creative desire) by making the expectations, work duties and target results for each person clear at the start of

each period and sharing these between superiors and subordinates, and by making a fair appraisal of work and results (contribution to the organization) at the end of the appraisal period.

On the other hand, systems have been revised as necessary to include factors such as process evaluation and level of contribution to the team to prevent individualism and too much emphasis being placed on results.

Other significant features include:

- Details of the appraisal system are made clear to all employees
- Each department and workplace holds appraisal meetings at the start and end of the appraisal period that bring together a number of appraisers. The beginning of period meeting agrees on common objectives and issues and assigns priorities, and the end of period meeting carries out a review by a number of different people.
- Everyone participates in establishing the issues for the employee being appraised at the start of the period and feeding back the appraisal results at the end of the period.

The union carries out a questionnaire on the appraisal system every year. The results of the 2007 questionnaire indicated that 83% of employees agreed with their appraisals.

In the future, ZEON will continue to work at establishing systems that allow everyone to perform creative work that adds more value, and that distribute opportunity and results fairly and impartially.

### Awards system (ZEON Challenge Award)

Awards schemes include the Employee of the Month (bestowed by department managers on a monthly basis) and the annual President's Award, whereby individual employees and departments nominate a specific challenge at the start of the year and are judged on their progress in the nominated area.

Annual awards include the President's Award, Excellence Award and Department Manager Award which are handed out at a lavish annual ceremony and dinner function. The event always includes surprises - for example, the families of the winners are invited to attend, unbeknownst to the winners themselves. It provides an important opportunity to celebrate their achievements while looking forward to the challenges of the coming year.

### ZEON Master system (Reemployment system)

A reemployment system has been introduced that allows retired employees who have valuable skills and a desire to remain involved with the company to continue working after retirement age. As a mark of respect, reemployed staff are referred to as "master (employees)".

Of the 90 employees who retired in 2007, 62 (69%) are active as master employees.



Winners of President's Award, 2007

## An easy working environment that emphasizes dialogue

Motivation, reliability, achievement, stability and safety, security

### Creating an easy working environment



With compliance with regulations as a prerequisite, ZEON strives to achieve flexible working practices based on the company's key words of "motivation", "reliability", "achievement", "stability and safety", and "security". In terms of health and welfare programs, the company has an ongoing commitment to "creating an easy working environment" centered around the four perspectives of "better workplace environments", "encouraging dialogue", "improving

### [Organizational structure and practices aimed at realizing an easy working environment]

<b>Flexible working practices</b>	Flexi-time scheme, recognition for work performed outside the workplace, discretionary work hours scheme for specialist and planning work, special holiday encouragement days, half-day holidays, no-overtime days, self-improvement activities, training for managerial and supervisory staff, survey of actual conditions, instruction form for out of hours work, labor/management committee, labor/management patrol	
<b>Support for combining work and child care</b>	Maternity leave before and after birth, child care/care giver leave system, part-time work system, limits on out-of-hours work and elimination of late night work, breast feeding time, leave to care for a sick child, child care/care giver leave support system, babysitting system	
<b>Health and welfare</b>	<b>Asset accumulation</b>	Financial planning seminars, employees' savings scheme (incentives for retirement savings), employee share scheme (with financial incentives), defined-contribution (DC) pension
	<b>Housing assistance</b>	Housing assistance system (dormitory and company housing, rent subsidy system, home ownership allowance, home rental for employees on transfer), housing loan system
	<b>Marriage</b>	Marriage cash payment, honeymoon leave, spouse allowance
	<b>Childbirth</b>	Childbirth cash payment, maternity leave, dependents and tuition allowances
	<b>Holidays and business shutdown</b>	Carry-over of holiday entitlements, My-life holidays, refresh holidays (Master employees)
	<b>Recreation facilities, training site</b>	Hakone Goraso Facility, Izu Ipeki Facility
	<b>Loans and self-help</b>	Bereavement condolence payment, bereavement leave, study loan, disaster assistance, medical indemnity, compensation for absence from work (ZEON health insurance cooperative association), optional group insurance, group life insurance, etc.

your health" and "supporting self-reliance (based on a life plan)".

### Support for raising the next generation

The "Law for Measures to Support the Development of the Next Generation" came into force in 2005 as part of government policy for dealing with the low birth rate.

Based on this law, ZEON has established an action plan up to March 2009 for supporting the raising of the next generation. To date, the company has introduced measures such as the "expansion of reasons for allowing employees to take a half-day holiday" and a new support system called the "part-time work system" to help employees manage child care and support work-life balance, and is taking steps to ensure that the operational and other aspects of these work smoothly. All female employees who gave birth took child-care leave and two male employees also took child-care leave.

### New measures added in the 2007 financial year

(1) Expansion of reasons for allowing employees to take a half-day holiday  
Child care responsibilities, participation at children's school activities, and the birthday of a spouse or child were added as permitted reasons.

(2) Part-time work system  
This program applies to employees recognized by the company who are living with and raising a child up to and including the third year of elementary school.

The scope of the flexi-time system for employees with child care responsibilities was also expanded.

\* Items in blue were added in 2007

## Expansion of flexi-time system

I took eleven months maternity leave after having my babies in June 2007 and returned to work in May 2008. Although, prior to returning to work, I was worried whether I would be able to manage work, housework and child care, I spoke with my supervisor before going back and they consented to my using the flexi-time system for tasks such as taking my children to day care.

Now, I am able to manage my affairs in a reasonable way with the understanding and cooperation of the other people in the workplace. Although I have only just come back to work, I have found that I am able to combine work, housework and child care and have come to cherish even more the time I spend with my children.

**Taeko Goto**  
Head Office  
(Employee who took child care leave)



# Relationship with Employees

## Measures to encourage dialogue

ZEON places a high value on teamwork and emphasizes dialogue (communication) as a way to create a common understanding between all employees and a workplace in which everyone shows concern for each other, and to improve "workplace strength".

Not only dialogue between management and employees, but dialogue between the company and the overall workforce and between separate workplaces are all critical to overcoming the barriers between different departments, getting the entire company working in the same direction and building a sense of satisfaction and pride amongst employees.

### (1) Dialogue with management

ZEON takes active measures such as holding policy explanation meetings where managers from the President on down visit the workplace to give explanations and provide an opportunity for exchanges of opinion. During 2007, 31 such events involving the President took place in factories and 15 at the R&D Center.

Some of these opinion sharing meetings included the opportunity for the attendees to share a few drinks to encourage a more in depth dialogue.



Research presentation meeting

### (2) Dialogue between management and labor

Numerous opportunities for exchanges of opinion are provided including formal and informal meetings between management and labor, RC audits, and joint management and labor patrols.

Although consultative meetings between management and labor provide ample opportunity for forthright discussion, both sides enter into this with a forward-looking attitude and a mutual spirit of friendly rivalry based on an underlying trust between management and labor.



Central consultative meeting between management and labor

### (3) Dialogue between employees

Although its culture is already dialogue-friendly, ZEON takes steps to encourage dialogue in various different situations in the hope that this will go some way to help bridge the gaps between departments and workplaces and between generations.

The company also has a program called "dialogue planning" that underlies the area of health and welfare by setting up situations for free and frank discussion between employees and also including families and the community.



Dialogue planning  
Bowling event

## ZEON labor union

### Building the opportunities to enjoy a happy life

The ZEON labor union had 1,539 members as of March 2008.

The union agreed a "Joint Declaration by Labor and Management" in 1998. This move was deployed by reaffirming a commitment to the company and to working conditions in which all employees can take pride, based on core values of contributing to society, innovative technology and participation by all achieved through a strong partnership between management and labor.

Subsequently, recognizing that the continued existence and growth of the company is a prerequisite for maintaining employment and sustaining and improving the standard of living, the union has taken an active role in the business of the company through measures such as the labor union itself purchasing company shares.

Union members are involved in implementing the declarations and other measures formulated with consideration for the opinions of union members obtained through consultation such as at the monthly formal and informal meetings between management and labor, with the aim of creating "overall working conditions that allow life and job satisfaction".

ZEON continues to see trust between workers and management as the foundation underlying progress towards our CSR strategy of creating "a company that is trusted by the public and a source of pride to its employees" and our overall vision of "building the opportunities to enjoy an even happier life".

**Toshiyuki Koumura**  
Chairman, Central  
Action Committee  
ZEON Labor Union



# Environmental and Safety Training

We are fully committed to safety management with training carried out at head office and special training exercises performed at each plant.

## Training at the Head Office

### Manager and supervisor training

"Production Manager Training" and "Foreman Training" programs held over two days and aimed at plant staff with front-line responsibility for safety management were jointly organized by the Human Resource Department and Environmental & Safety Affairs Department. Since 2004, these training sessions have encouraged participants from the production and maintenance departments, including the maintenance superintendent, to work together. The training has covered environmental and safety laws, classroom work on basic safety, awareness education conducted via group discussions on preventing accidents and workplace injuries, and courses conducted by external tutors on "How to Carry Out Workplace Tours and Inspections" that build on basic learning about how best to go about performing inspections. Priority has also been placed on training in techniques for root cause analysis in an

effort to prevent problems reoccurring.

The Safety Environmental Affairs Department also provides executives from affiliated companies with annual training designed to promote awareness of safety issues.

In addition, training for new production managers and environment and safety managers was held twice during the 2007 year.

### Safety training by past plant managers

A trial using past plant managers with extensive knowledge and experience to provide safety training for employees was continued. Since 2003, safety training for all plant staff has been carried out with past plant managers as tutors. In 2007, this course used a video of an experimental explosion to demonstrate the danger inherent in familiar chemicals and other products, using an actual recent example of a serious workplace accident as an example. The training was well received and similar training will continue in the future.



Foreman training  
(Scene from group discussion on preventing workplace accidents)



Training for production managers  
(Scene from group lesson about the value of analysis)

## Environment and Safety Training Exercises at Plants

ZEON performs "Abnormality Anticipation Drills", "Emergency Training", "Comprehensive Fire Drills" and "Report Training" as part of an annual plan. We are also involved in everyday activities such as a forklift driving safety contest. Active steps were also

taken in 2007 to extend to the plants a practical learning system that was launched in 2004, and we conduct ongoing training programs for employees that use simulations to raise their awareness of safety. Specifically, we held a practical fire drill and a simulation of being caught up in a rolling mill.



Scene from the fire drill and practical fire fighting training exercise (hosted by the Mizushima Industrial Complex Civil Defense Association)



Hands on training for new employees at Mizushima Plant

# Product Development

## Eco-friendly Product Development



**Products that Promote Energy Saving**

### Synthetic rubber for fuel-efficient tires

Synthetic rubber is the primary material used in the car tires that contribute to the safety and comfort of vehicles. In developing synthetic rubber that makes tires more fuel-efficient, ZEON has succeeded improving energy losses by 20%. Tires produced using this rubber can improve fuel consumption by 1.5% (estimate by ZEON), saving on fuel use and reducing CO<sub>2</sub> emissions.

Automobile tire made of fuel-efficient synthetic rubber

### Using tires to help reduce fuel consumption

The general-purpose rubber development team has the job of developing environmentally friendly rubber for use in tires. While fuel-efficient vehicles with hybrid engines are one way of reducing vehicle CO<sub>2</sub> emissions, reducing the rolling resistance of tires also reduces fuel consumption. We work at the molecular level to design and develop rubber with excellent fuel-efficiency performance that we then supply to tire manufacturers. Seeing these eco-tires becoming more widely used makes us feel for a moment that we are contributing to the society and the environment.



**Naoaki Kuramoto**  
Rubber Research Group  
Elastomer C5 Laboratory

**Products that Promote Energy Saving**

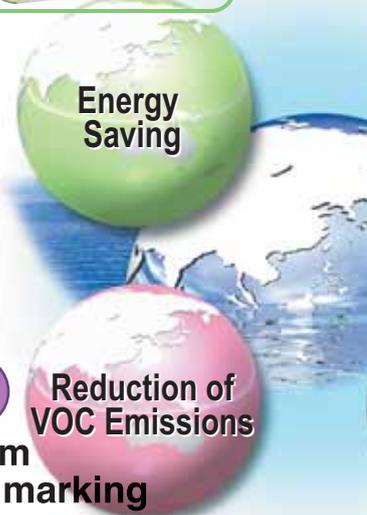
### Zeoglobule<sup>®</sup> polymerized toner

Pulverization is the conventional method for producing the toner used in copiers and similar equipment. However, it is also known that using polymerization for toner production reduces energy consumption during production and results in finer toner particles.



Toner electron microscope image

The microcapsule toner produced using a polymerization method developed by ZEON contributes to better print quality and allows the fixing temperature to be lowered. This in turn allows faster printing speeds, smaller printers, and better energy efficiency.



**Products that Help Eliminate Use of Organic Solvents**

### Quintac<sup>®</sup> solvent-free thermoplastic elastomer for adhesive tape

Previous production methods for adhesive tape required the use of solvents and therefore resulted in the release of VOCs (volatile organic compounds) into the environment.

On the other hand, using ZEON's Quintac<sup>®</sup> thermoplastic elastomer which has a block structure of polystyrene and polyisoprene allows adhesive tape to be produced without the use of solvents and therefore helps reduce VOC pollution. It also saves on the energy that was previously used to evaporate the solvent in the final stages of production.



Adhesive tapes produced using thermoplastic elastomer

**Products that Encourage the Elimination of Organic Solvents**

### Quintone<sup>®</sup> C5 petroleum resin for hot-melt road marking

Quintone<sup>®</sup> C200 series

Hot melt road marking paints that use the Quintone C200 series as a binder can be used without solvents. This helps reduce VOC (volatile organic compound) pollution.



Traffic paint that uses Quintone C5 petroleum resin

Products that Help Protect the Ozone Layer and Prevent Global Warming

Next generation fluorocarbon detergent **Zeorora® H**

As recently discussed at the Toyako Environmental Summit held in Hokkaido, measures to deal with environmental problems on a global scale such as preventing global warming and the depletion of the ozone layer are becoming important issues. Zeorora® H is a detergent with excellent environmental characteristics including an ozone depletion coefficient of zero and minimal effect on global warming. The benefits of the product have been publically acknowledged through commendations such as the Stratospheric Ozone Protection Award from the U.S. EPA and the GSC Environmental Award from the Green & Sustainable Chemistry Network (GSCN). It is now exhibited at the "Aiming for Green Chemistry" booth at the National Science Museum in Tokyo.



Detergent Objects



EPA Ozone Protection Award

Products with Low Environmental Risks

New ether solvent **Cyclo-pentyl methyl ether (CPME)**

CPME is used as a solvent in chemical processes for pharmaceuticals, agrichemicals and electronic materials as a substitute for existing ethers (THF, ether, etc.) which have a number of different problems.

If CPME is used in ways that take advantage of its characteristics, the benefits include energy savings and less impact on the environment.

- 1) Its lack of water solubility means it can easily be separated from water and recycled. This reduces waste water and waste fluid volumes.
  - 2) Because it does not readily form peroxides, it can easily be recovered by distillation.
  - 3) Significant cost savings can be achieved on both variable and fixed costs because the reaction, extraction and crystallization processes can all use the same solvent.
- CPME won the 2006 prize from the Society of Synthetic Organic Chemistry in Japan.

Global Warming Prevention

Reducing Environmental Risks

Products with Low Environmental Risks

Plant growth regulator **Jasmonate®**

This product is a plant growth regulator derived from jasmonic acid (an aroma compound of flowers) that controls the ripening process of fruits and improves the environmental resilience of plants. It helps prevent problems such as discoloration in apples and skin damage in mandarins that have become more common in recent years due to climatic warming.

Jasmonate® has been well received by the agriculture industry and was awarded the 2005 Technology Prize by the Japanese Society for Chemical Regulation of Plants. It is becoming more widely used for nashi in South Korea and grapes and tropical fruit in Taiwan.



Jasmonate Solution

Products made with Zeonex or Zeonor

Products with Low Environmental Risks

Cycloolefin polymer **ZEONEX®** **ZEONOR®**

ZEONEX® and ZEONOR® are new thermoplastics with superior physical properties that were developed using our unique technology with consideration for the environment, safety and health.

These polymers have very low levels of impurities compared to other plastics and because they are manufactured from hydrocarbon resins with low environmental risks, no hazardous gases are released during incineration. They are widely used in various fields including cameras and office equipment, liquid crystal and other optical components, medical and inspection equipment, containers, and electronic devices.



Lenses and prisms

Research into environmental solvents is well-regarded

We are involved in research and sales of products such as solvents that contribute to environmental protection and agrichemicals that improve fruit harvests. This work has been well-regarded outside the company and has been rewarded with awards from various industry associations.



Masami Koshiyama  
Specialty Materials Laboratory, R&D Center

Noriyasu Otsuki  
Chemical Products Division

Kiyoshi Watanabe  
Chemical Products Division

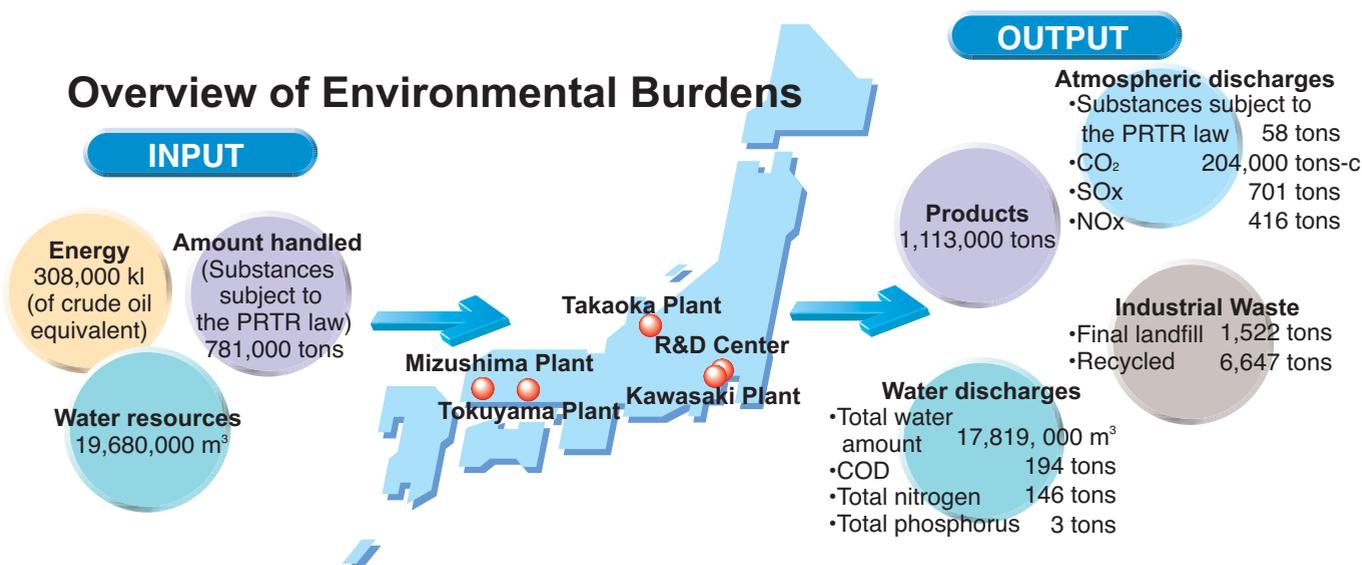
# Achievements

## Overview of 2007 Plan and Results

Item	2007 Plan	2007 Results	Self evaluation
1 Eliminate environment and safety abnormalities	(1) Full implementation of plant safety evaluations	75 investigations performed	☆☆☆
	(2) Enhance the 5S safety program and expand to affiliates	The same 5S safety audit was performed companywide at 45 workplaces (once a year). 5S safety audits were also performed at affiliated group companies.	☆☆☆
	(3) Training to raise awareness of accident prevention	Implemented at all four plants (also implemented at head office and one affiliated company)	☆☆☆
	(4) Zero environment incidents, zero safety incidents	One environment incident, one safety incident	☆
2 Promote occupational health and safety	(1) Fully establish the "Occupational Health and Safety Management System" and use risk assessment to eliminate dangers	Risk assessment for operations at each workplace implemented annually 6.3 times/workplace	☆☆☆
	(2) Zero lost-time accidents, zero serious non-lost-time accidents	One lost-time accident, no serious non-lost-time accidents	☆
3 Reduce environmental burdens	(1) Implement a voluntary management plan for air-polluting toxic substances Reduce the butadiene air discharge from the 2006 level of 25.1t to 8.2t	Butadiene: 21.6t (14% reduction from previous year)	☆
	Reduce the acrylonitrile air discharge from the 2005 level of 24.7t to 18t	Acrylonitrile: 20.7t (16% reduction from previous year)	☆
	(2) Implement a zero emissions plan for industrial waste Reduce the volume of waste sent to landfill from the 2006 level of 1,200t to 1,020t	Final landfill amount: 1522t (322t increase from previous year)	☆
	(3) Strengthen the company-wide energy conservation project Reduce unit energy consumption to 90.6% of the 1990 level	Unit energy consumption reduced to 94.9% of the 1990 level	☆
	Collect information on energy used in distribution	Reported in fiscal 2007	☆☆☆
4 Promote chemical safety and product safety	(1) Implement product safety reviews for new products and new applications	3 reviews performed	☆☆☆
	(2) Provide customers with environmental and safety information (MSDS)	Issued MSDS for all products and implemented corrections (implementation rate: 100%)	☆☆☆
	(3) Report new substances (laws related to chemical substance investigation and production regulations, Occupational Health and Safety Law)	Performed correctly	☆☆☆
	(4) Zero law violations	No law violations	☆☆☆
5 Promote distribution safety	(1) Full operation of the yellow card	Training performed through the logistics council	☆☆☆
	(2) Reduce burden on the environment	Simplifications to packaging and containers and improved liquid product transport efficiencies are currently being implemented	☆☆☆
	(3) Zero logistics accident	No logistics accidents	☆☆☆

☆☆☆Target achieved ☆☆☆Target was almost reached ☆☆☆Requires improvement

## Overview of Environmental Burdens



# Safety and Accident Prevention

A manufacturer's starting point is the plant. Our management and plants work together every day to achieve their shared mission of "emphasizing safety, the environment and quality, and ensuring a 100% accident-free and incident-free workplace".

## Dialogue Between Management and Plants

There is an active program of management visits to each plant to provide the opportunity for dialogue between the management and plants. This includes direct interaction with the plant staff who work at the front line to allow frank discussion about how best to make the plants even safer and more reliable than they currently are, with "good judgments save money" being the key principle. The President actively promotes these dialogues and he made 56 plant visits in 2005, 43 in 2006 and 46 in 2007.

## The President takes the lead in promoting safety management

Recognizing that safety takes priority over all other management issues, the president is at the forefront of efforts to establish the best possible safety management system across the whole company.

### 1. Introduction of an equipment information management system to prevent omissions ("Never rely on 'maybe' or 'should'").

We are making effective use of the reporting, inspection planning, inspection records and inspection omission detection functions of the new system that was introduced in 2004. Upgrades are also being made to the system for storing drawings.

### 2. Plant deterioration countermeasures and foolproofing measures ("Good judgments save money")

The essential elements for a safe and stable workplace are people, equipment and money.

We formulate systematic countermeasures on a scientific basis, such as estimating the remaining life of equipment. We are advancing fool-proofing to prevent accidents by involving all employees in brainstorming.

### 3. Review of past accidents and recurrence prevention ("Never rely on 'maybe' or 'should'").

To eliminate safety incidents and prevent worker accidents, we regularly use modern technology to review past accidents, determine whether current countermeasures are effective and consider whether technology is available to provide even better recurrence prevention.

### 4. Review of standards ("Always follow the rules. Change any rules that cannot be followed")

We constantly try to improve our standards by making them easier to observe and easier to understand. We work systematically to eliminate unnecessary standards, simplify the contents of others, and make full use of pictures and diagrams to make the standards easier to use.

## Accreditation of all offices as certified safety inspectors

Following on from having the personnel responsible for safety inspections at our Mizushima and Tokuyama Plants accredited as certified safety inspectors in the 2006 financial year, the accreditations for the safety inspectors were renewed and certification was obtained for the personnel responsible for completion inspections at the Kawasaki Plant in the 2007 financial year. As a result, all sites now have safety inspectors who are certified under the new law.

## Plant Safety Evaluation

When we commission a new plant or an upgrade to an existing plant, we evaluate the plant's safety in five stages from the basic design through to the start of production. This involves setting up detailed check lists for safety evaluation with the aim of creating a more reliable and safe plant. We performed 54 such checks in 2006 and 75 in 2007.

## All ZEON Safety Conference

April of each year is ZEON Safety Month during which we increase our emphasis on safety activities. Risk prediction is a major focus with extra effort put into 4R-KF, while enthusiasm for safety activities is boosted by distributing safety relay essays about risk prediction to all employees.

The All ZEON Safety Conference is also held during this period. This successful event was attended by about 160 people including the President.

This year's conference included a lecture from an invited speaker entitled "safety is determined by how top management behave" that covered the prevention of human error, accidents, and other incidents. Other presentations described case studies of practical 4R-KY work, foolproofing work, and measures for preventing accidents and work injuries.

The conference recognized the people working on ongoing safety activities and the President distributed commendations and prizes to each participant to help foster a culture of safety awareness.



Inspection tour by the President



All ZEON Safety Conference

# Occupational Health and Safety

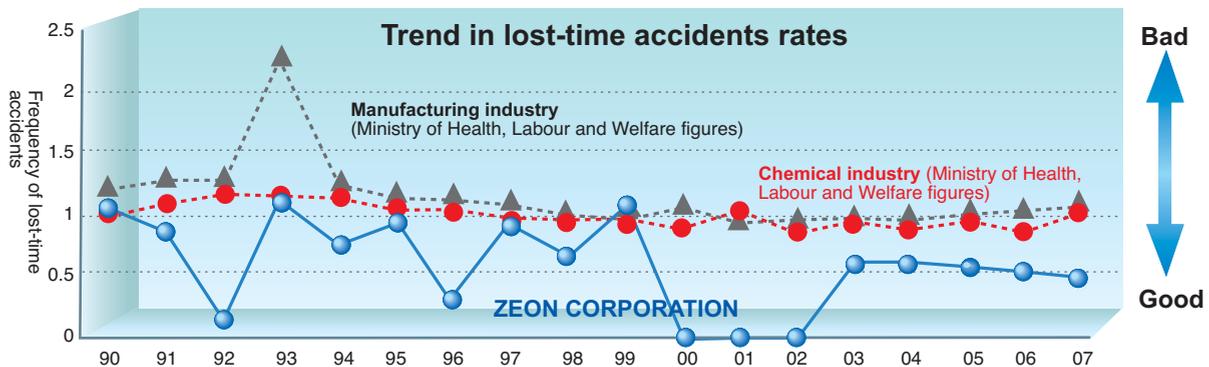
## Industrial Health and Safety Initiatives

ZEON undertakes measures to prevent workplace accidents for the sake of employee health.

In striving to achieve a stable and safe production system that increases "workplace strength", ZEON puts considerable effort into 5S safety audits, risk assessments and caring-for-

each-other activities. Other initiatives are identifying near-miss incidents, hands-on learning, supervisor training for production managers, foremen and others, and running safety training at affiliated companies.

Other measures aimed at promoting the physical and mental well-being of employees include physical exercises and mental health education.



## Safety 5S Diagnosis

Based on ZEON's safety philosophy that "safety will be achieved by following our 5S program and when everyone takes responsibility for their own actions", 5S safety audits are carried out annually at each company site and affiliated company.

Five company sites and fourteen sites from amongst eleven affiliates were visited in 2007. These audits not only identify things that are wrong, they also emphasize positive points that could serve as a model for others. A supreme award and commendation awards are given out on a departmental basis at the All ZEON Safety Conference to recognize these.



5S safety audit (Takaoka Plant)

## KY ("Kiken Yochi") Risk Assessment

To prevent workplace accidents and deal with the potential for human error, ZEON has adopted the "4R-KY" ("four-round kiken yochi (risk assessment)") practice whereby employees check for any unsafe situations before starting a task to avoid placing themselves in danger. Based on the size of each workplace, workers who had received external training to learn the correct methods were deployed as "KY trainers" during 2007 to promote the KY program in their own workplaces.



Risk assessment (Kawasaki Plant)

## Expanding Caring-for-each-other Activities

With the aim of reducing unsafe activities in employees' daily work, ZEON has put in place a company-wide program of "caring for each other" that seeks to build relationships between people and create a culture that encourages not only supervisors and other staff working in the same workplace, but also staff from affiliated companies to point out any unsafe activities.

Three "Special Action Months" were held during 2007 during which the "warning frequencies" at each workplace were collated and published as a way of engaging people's competitive spirits to promote action. During the 2007 financial year, more than 30,000 warnings were counted across all group companies in just these three special action months.

## Formalized Hands-on Training

Each workplace introduced hands-on training for workplace accident prevention to better capture the attention of staff.

Hands-on training sessions demonstrating getting caught in a rolling mill were conducted across the ZEON group.



Hands-on training at Optes Inc.



Hands-on training session demonstrating getting caught in a rolling mill

## Health Management

Everyone wants to work in a comfortable and healthy environment. With the aging population, the number of people suffering from lifestyle-related diseases or conditions identified in health checks is increasing. In addition to obligatory regular health checks and special health checks, medical checks include diagnostic checks to prevent metabolic syndrome (visceral adiposity), checking for colon cancer, funduscopy, gastric examination, gynecological examination, tumor markers and family health checkups. In addition to this, measures such as nutritional advice, health seminars and health work are provided for health and fitness.



Health and fitness session

## Mental Health

ZEON believes that taking active steps to maintain mental health is important and the company conducts annual mental health training across the entire company. Fourteen such training sessions, which were entitled "Power Harassment and Mental Health" and targeted at all employees, were held during 2007 and were attended by about 1,100 employees.

To boost "care by industrial health staff in the workplace", temporary mental health personnel were deployed to provide counseling and training to employees in accordance with the circumstances in each workplace.



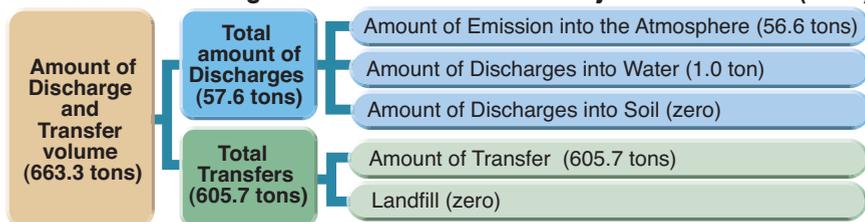
Mental health training

# PRTR Activity

The entire company is making an effort to reduce discharges and transfer of substances subject to PRTR.

The PRTR (Pollutant Release and Transfer Register) law applies to 40 substances used at ZEON. Total discharges reduced from 67.8 tons in 2006 to 57.6 tons in 2007. ZEON is working vigorously to reduce discharges.

## Amount of Discharge and Transfer of PRTR Subject Substances (2007)



## Discharge and transfer data for substances restricted by law

Government adherence control number	Substance name	Amount Used (tons)	Discharges to Atmosphere (tons)	Discharges to Water (tons)	Total Discharges (tons)	Transfer Volume (tons)
2	Acrylamide	59.9	0.1	0.0	0.1	0.0
3	Acrylic acid	96.9	0.0	0.0	0.0	0.0
4	Ethyl acrylate	2,047.0	2.5	0.0	2.5	0.0
6	Methyl acrylate	65.4	0.3	0.0	0.3	0.0
7	Acrylonitrile	26,506.9	20.7	0.0	20.7	139.2
22	Acryl alcohol	22.4	0.0	0.0	0.0	0.0
23	1-allyloxy-2, 3-epoxy propane	229.9	1.9	0.0	2.0	0.9
24	linear alkylbenzenesulfonate and salt thereof	1,111.3	0.0	0.0	0.0	0.0
28	Isoprene	143,943.2	0.7	0.1	0.8	1.0
30	Bisphenol A type epoxy resin	15.9	0.0	0.0	0.0	0.0
42	Ethylene oxide	1,104.2	0.0	0.0	0.0	0.0
46	Ethylene diamine	2.3	0.0	0.0	0.0	0.0
47	Ethylenediamine tetraacetic acid	65.7	0.0	0.0	0.0	0.0
54	Epichlorohydrin	968.4	0.0	0.0	0.0	0.0
56	Propylene oxide	10.5	0.0	0.0	0.0	0.0
63	Xylene	393.8	0.1	0.0	0.1	5.4
77	Vinyl chloride	759.0	1.3	0.0	1.3	0.0
102	Vinyl acetate	287.7	0.1	0.1	0.2	0.0
159	Diphenylamine	6.1	0.0	0.0	0.0	0.0
172	N, N-dimethylformamide	386.9	0.0	0.0	0.0	0.6
177	Styrene	47,152.6	1.7	0.0	1.7	52.9
179	Dioxins*	0.3	0.1	0.0	0.1	0.1
202	Tetrahydromethyl phthalic anhydride	2,535.5	0.0	0.0	0.0	253.6
227	Toluene	4,873.7	0.9	0.0	0.9	148.6
231	Nickel	48.5	0.1	0.0	0.1	0.0
232	Nickel compound	66.7	0.0	0.0	0.0	0.0
256	2-vinylpyridine	208.7	0.4	0.0	0.4	0.0
266	Phenol	128.3	0.0	0.0	0.0	0.0
268	1, 3-butadiene	539,086.8	21.6	0.0	21.6	0.0
272	Bis phthalate (2-ethylhexyl)	293.1	0.0	0.0	0.0	0.0
299	Benzene**	3,434.7	0.0	0.0	0.0	0.0
307	Poly(oxyethylene) alkylether	4.2	0.0	0.0	0.0	0.0
309	Poly(oxyethylene) nonylphenyl ether	89.4	0.0	0.0	0.0	0.0
310	Formaldehyde	3.0	0.0	0.0	0.0	0.0
313	Maleic anhydride	1,723.4	0.7	0.7	1.3	0.0
314	Methacrylic acid	2,020.2	0.0	0.0	0.0	0.0
316	Methacrylic acid 2,3-epoxy propyl	6.7	0.0	0.0	0.0	0.0
319	Methacrylic acid (n-butyl)	4.1	0.0	0.0	0.0	0.1
320	Methyl methacrylate	996.8	3.6	0.0	3.6	3.5
321	Methacrylonitrile	3.3	0.0	0.0	0.0	0.0
	<b>Total</b>	<b>780,762.9</b>	<b>56.6</b>	<b>1.0</b>	<b>57.6</b>	<b>605.7</b>

\*Units of dioxins are mg-TEQ \*\*Benzene is contained as impurities in raw materials

Note: The PRTR Law specifies the amount in units of "kg" with fractions to 2 significant digits, but the table above shows values in units of tons.

# Hazardous Chemical Substance and Industrial Waste

## Reduction of Hazardous Chemical Substance Emissions into the Atmosphere

We are working actively to reduce emissions, particularly of butadiene and acrylonitrile.

Efforts are being made headed by the Chemical Industry Association of Japan to understand and reduce the level of emissions into the atmosphere of the twelve substances with the highest priority. Meanwhile ZEON is working actively to reduce emissions of the three substances on this list that are used at the company.

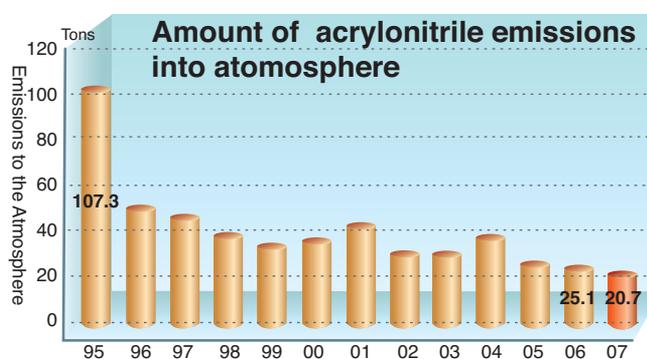
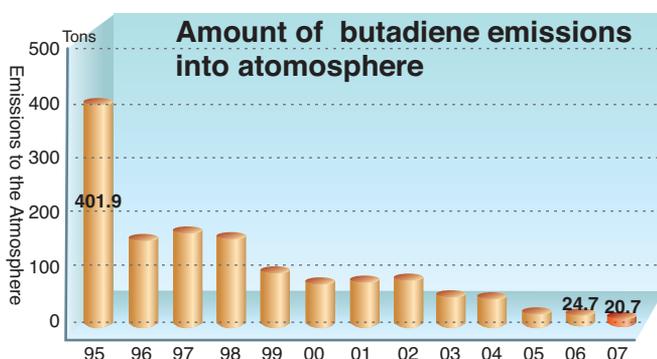
Thanks to process improvements and technological developments over many years, ZEON completely eliminated the use of benzene in 2000 and consequently has achieved zero atmospheric emissions.

For butadiene, improvements in the utilization of the

waste gas combustion equipment at the Kawasaki Plant have reduced emissions by four tons.

Further, the company plans to reduce emissions from its monomer recovery process at the Tokuyama Plant during the 2008 financial year.

We reduced acrylonitrile emissions by 4.4 tons in 2007 compared to the previous year through measures such as operating a monomer recovery system. Further reductions are anticipated due to improvements to the recovery process and changes to the product range.



## Reduction of Industrial Waste

We are tackling the issue of waste products produced during manufacturing on a topic-by-topic basis and achieving steady reductions.

The total volume of industrial waste disposed of externally in landfills was 322 tons higher than in the previous year.

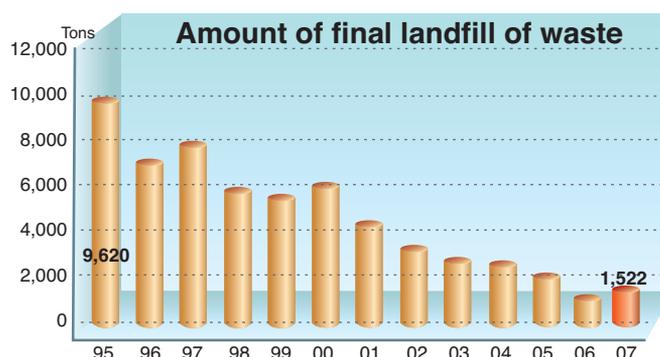
In particular, a temporary increase in the volume of extracted sludge occurred with the shift to using a single activated sludge tank when PVC production was shutdown at the Takaoka Plant.

Volumes at the Kawasaki Plant also increased due to problems with the combustion furnace. At the Mizushima Plant, we have made reductions through

the reuse of combination combustion furnace residue.

The medium-term target for the amount of industrial waste that is ultimately disposed of in landfills defines an amount 10% or less of the actual disposal volume in 1995 as representing zero emissions. Work is underway in this area and the goal is expected to be achieved by the year 2010.

Currently, ongoing investigations into the utilization and incineration of sludge are in progress. ZEON is also working actively to improve sorting in order to encourage recycling and other ways of making effective use of industrial waste.



# Air and Water Quality

We are continuing our company-wide efforts to reduce the burden on the environment, and when installing a new plant or expanding a plant, we try our best to prevent any increase in this burden through technological improvements. We will continue to make additional efforts in the future.

Progress on reducing atmospheric pollution includes improvements in SO<sub>x</sub> and NO<sub>x</sub> emissions. The Tokuyama Plant has increased purchases of externally supplied steam and the resulting reduction in boiler operating time has been beneficial in lowering emissions of SO<sub>x</sub> due to heavy oil and thermal NO<sub>x</sub>.

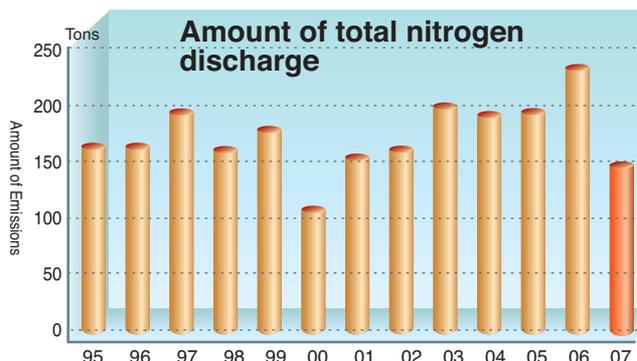
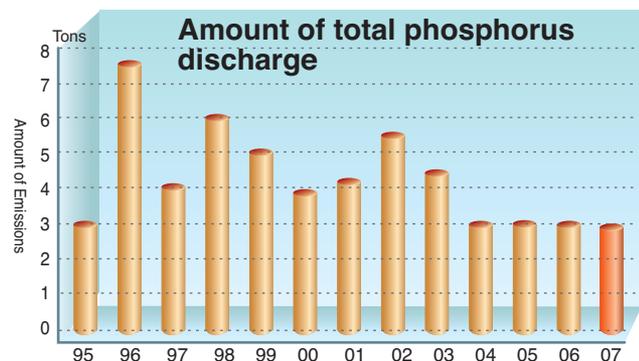
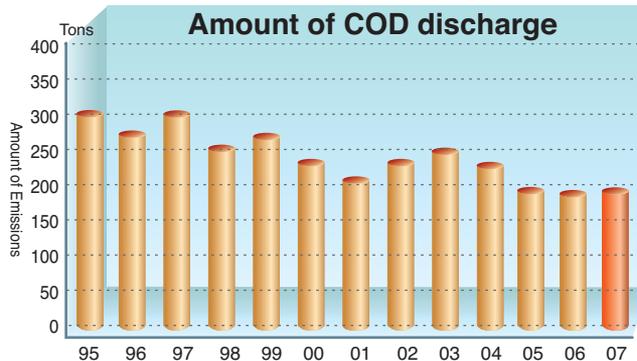
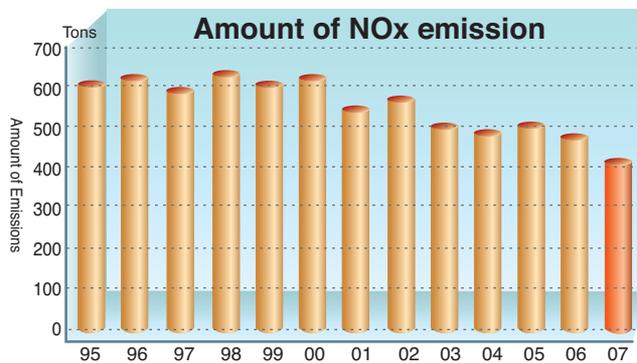
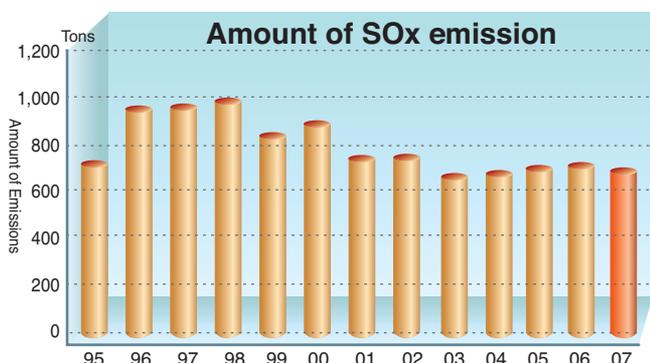
We have been working on measures such as recirculation to reduce total waste water volumes and a small decrease has occurred due to lower production volumes.

Waste water quality continues to meet the requirements of the Clean Water Act and agreements with local governments.

COD is a measure of organic compounds contained in waste water and although we have been working to

reduce COD emissions, the levels remain roughly the same as 2006 due to increased production of product ranges that produce a heavy COD load.

Regarding total nitrogen levels in waste water, to counter an increase in production at the Kawasaki Plant of products such as NBR (acrylonitrile and butadiene rubber) that are associated with high output of waste water by-products, new nitrogen elimination equipment has been installed to increase the removal of nitrogen from waste water. Although we have succeeded in reducing the total volume of nitrogen discharge across the entire company by 90 tons (or 62% compared to the previous year), we are continuing to work on improvements and better management.



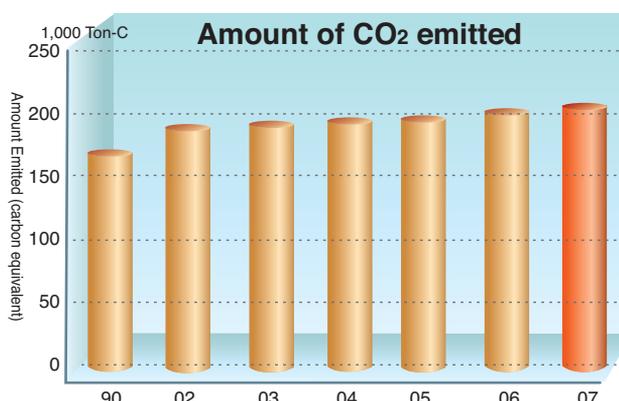
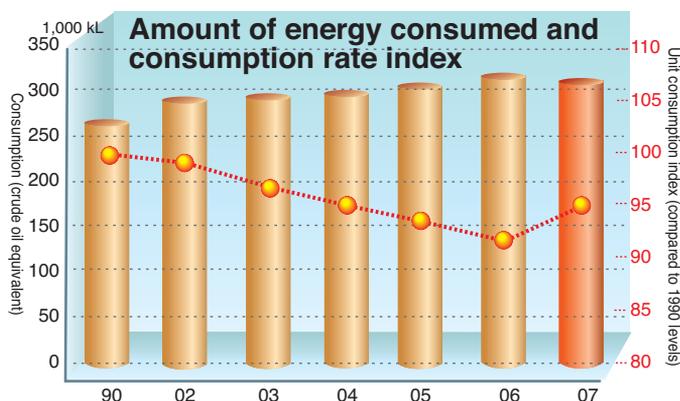
# Resource and Energy Saving

In order to achieve the goal of "reducing the average energy consumption rate for the 2008 to 2012 period to 87% of the 1990 level" set by the Japan Chemical Industry Association, we have held energy conservation promotion meetings throughout the company and have actions in progress.

Although 2007 energy use measured in terms of equivalent consumption of crude oil reduced slightly to 98.8% of the previous year's level, the overall level of production was down to 95.9% of the previous year and therefore the unit consumption index (compared to 1990 levels) went from 92.1% in 2006 to 94.9% in 2007.

Although energy saving measures such as high-rate

operation have been adopted, circumstances such as the low utilization caused by halting PVC production at the Takaoka Plant and shorter operating times due to a long shutdown for periodic inspections at the Mizushima Plant and problems with the monomer recovery equipment have meant that these have not been reflected in improvements in the unit consumption index.



## Energy Consumption Associated with Transportation

Under amendments to the Energy Conservation Law, responsibility for development and implementation of energy-saving strategies rests with the party responsible for requesting transportation of the goods (the consignor or owner of the goods).

A company with an annual freight volume of 30 million ton-kilometers or more is defined as a designated major consignor under the amended law

and is subject to additional requirements.

On the basis of its total freight shipping volumes (including the four production plants and the R&D Center), ZEON is a designated major consignor and the company submitted its regular declaration to the Ministry of Economy, Trade and Industry on June 30, 2008.

We will continue in the future to do our very best to conserve energy in distribution as well as in production processes.

### Energy conservation topics Energy conservation plan for the Mizushima industrial complex

At the Mizushima industrial complex precinct, Asahi Kasei Chemicals, ZEON and Nippon Petroleum Refining (the refining arm of ENEOS) have started work on a joint program to save energy by recycling petroleum residue.

The project has been adopted to as part of the NEDO Energy Conservation Project Support Scheme. Nippon Petroleum Refining will build a new solvent de-asphalting line at the Mizushima Refinery for extracting kerosene and light oil from asphalt and other heavy oil distillates. The petroleum residue (or pitch) generated by the

extraction process will be used as fuel for new boilers to be built by Asahi Kasei Chemicals and ZEON. This will save energy by reducing use of the light oil and other fuels used in the past.

It is estimated that this will deliver significant energy savings across the entire industrial complex (equivalent to approximately 98,000 kl of crude oil) and commercial operation is due to commence in July 2009.



Energy conservation plan for the Mizushima industrial complex

# Environment and Safety in Logistics

ZEON works to ensure safety and reduce the burden placed on the environment by its distribution and logistics activities.

## Logistics Safety

ZEON has instituted the “Yellow Card Management Rules” for transport of toxic or dangerous products. These rules require drivers to carry a yellow card when such products are being shipped. Drivers are also given training on the reporting procedures. Training on how to handle products correctly is also performed at each plant to help prevent logistics accidents.



Yellow card

## Environmental Countermeasure for Logistics

### 1. Use of metal containers to pack synthetic rubber products

To help prevent deforestation, ZEON has switched to

using metal box pallets to pack synthetic rubber. The switch is already complete for export products, and the program to phase-out wooden boxes in domestic distribution commenced in 2005 with the proportion of metal packaging exceeding 80% in 2007.



Domestic wooden box pallet



Domestic metal box pallet

### 2. Amendments to the Energy Conservation Law

As a designated major consignor, ZEON is committed to efficiency improvements designed to minimize energy consumption.

ZEON has investigated and introduced a variety of strategies in this area, including working with other

companies to improve loading ratios and fuel consumption, and modal shifts to railway and marine transport. Following on from the Tokuyama Plant, the Mizushima Plant also received a modal shift commendation from the Central Japan Transportation Bureau in 2007.



2007 Modal Shift Award

# Audits

We perform a variety of audits to check the implementation status of policies such as our Responsible Care activities.

## ZEON and Affiliate Audits

### Responsible Care Audits

Every year, an audit team led by the director in charge of CSR visits plants to perform a Responsible Care audit.

The progress of improvements is checked in the audit using the “Specified Improvement Plan and Implementation Report”.

### Plant Technology Audits

A plant technology auditor is appointed to audit the plant equipment for safety and stability during operation at the four plants and at ZEON Chemicals Yonezawa Co., Ltd. at least once a year.



Plant Responsible Care audit



Audit team on site

### Affiliate Safety Inspections

A team led by the head of the Safety Environmental Affairs Department performs a review and offers guidance on the implementation status of Responsible Care activities at affiliates at least once a year.



Affiliate safety inspection

### PL Audits

An audit team led by the head of Quality Assurance Department performs an annual audit focusing on PL (product liability) and chemical safety at the operational departments and affiliate companies.

### Other Audits and Inspections

The head of the Safety Environmental Affairs Department performs special audits as required. A special audit by the head of the Safety Environmental Affairs Department is carried out if he deems it necessary when a serious accident, serious security breach, or serious environmental incident occurs. The audit performs an on-site investigation of the causes and makes any necessary improvement recommendations.

## Internal Plant Audits

### Diagnosis by the Plant Manager

All the plant managers review the implementation status of Responsible Care measures at their own plant at least once a year.

### Internal EMS Audits

A regular audit is performed to check the EMS (Environment Management System) implementation status based on the ISO14001 manual. Both internal and external courses are provided at each plant to train employees to be internal auditors.

# Environmental Economic Perspective

## Environmental Accounting

Since 2002, ZEON has publicly released its environmental protection costs and environmental protection effects (physical effects and economic effects) in line with guidelines issued by the Ministry of the Environment. This environmental accounting report is prepared based on the main items in the Ministry of the Environment's "Environmental Accounting Guidebook 2002" and the "Procedures for Environmental Protection Cost Classification" (April 2003).

### Environmental Protection Costs

#### Capital investment for environmental protection

The major investment in pollution prevention during 2007 was the upgrade to the aeration tanks at the Tokuyama Plant. The objective was to increase dissolved nitrogen through improved aeration and thereby reduce total COD volumes. Also, PVC production at the Takaoka Plant was shutdown at the end of the 2007 year. Other improvements included equipment upgrades to optimize waste water loads.

A new industrial waste facility at the Kawasaki Plant entered full operation in 2007 to help reduce environmental odors.

The Tokuyama Plant has made an additional investment in replacing wooden containers for packaging synthetic rubber with recyclable metal equivalents to reduce the overall environmental impact of packaging.

As a concrete example of our energy saving efforts, the incinerator at the Kawasaki Plant was modernized to reduce LNG usage.

The Tokuyama Plant has also invested in heat recovery from purchased steam and this has succeeded in reducing their total steam usage.

#### Environmental protection costs

We are developing technologies to minimize waste water and to reduce the level of volatile substances that remain in products. We are focusing in particular on reducing butadiene and acrylonitrile, both toxic air pollutants, and on developing technology, designing equipment and trialing operating procedures to reduce the level of contaminants such as T-N and COD in waste water.

We have reviewed our Responsible Care Report and are working to supply information to our customers and others through publications such as our CSR reports issued since 2006, with these being treated as environment-related management costs.

Meanwhile, our affiliated group companies have been concentrating on administrative and improvement activities aimed at establishing and maintaining their own environment management systems.

### 2007 Environment Accounting Sheet

Environment Protection Costs (Million Yen)		ZEON Corporation		Affiliated Group Companies	
Classification		Investment Amount	Expenses	Investment Amount	Expenses
<b>1. Costs within the business area</b>		900.9	2,704.0	992.5	2,859.4
<b>Breakdown</b>	(1) Pollution prevention costs	789.3	1,997.9	830.7	2,036.1
	(2) Global environment protection costs	97.0	228.6	105.4	235.4
	(3) Resource recycling costs	14.6	477.5	56.4	587.9
<b>2. Upstream and downstream costs</b>		149.1	2.5	149.1	83.2
<b>3. Management activity costs</b>		0.0	84.6	0.0	105.4
<b>4. Research and development costs</b>		39.9	832.9	39.9	845.4
<b>5. Social activity costs</b>		0.0	114.9	0.0	115.7
<b>6. Environmental damage handling costs</b>		0.0	104.8	0.0	104.8
<b>Total</b>		1,089.9	3,843.7	1,181.5	4,113.8

**Scope of accounts**  
 ZEON Corporation  
 ZEON Head Office, R&D Center, Takaoka Plant, Kawasaki Plant, Tokuyama Plant, Mizushima Plant

**Affiliated Group Companies:**  
 Okayama Butadiene Co., Ltd., ZEON Chemicals Yonezawa Co., Ltd., ZEON Logistical Materials Co., Ltd., RIMTEC Corp., ZEON Medical Inc., ZEON North Co., Ltd., ZEON Yamaguchi Co., Ltd., ZEON Polymix Co., Ltd. Otsu Plant and Kawagoe Plant, Optes Inc. Sano Headquarters Plant and Toyama Plant, ZEON Kasei Co., Ltd. Ibaraki Plant

**Period Covered**  
 April 1, 2007 to March 31, 2008

Item	ZEON Corporation	Affiliated Group Companies
Total investment amount within applicable period	33,118	35,500
Total research and development costs within applicable period	11,612	11,801

## Environmental Protection Effects

### Physical effects

If the area of atmospheric pollution, a gradual decrease in NOx emissions has been achieved by the upgrade to the incinerator at the Kawasaki Plant and increased use of purchased steam at the Tokuyama Plant. SOx emissions are also steadily declining.

Waste water quality continues to meet the requirements of the Clean Water Act and agreements with local governments. As the 2009 target date set in the 6th regulations on total waste water discharges approaches, these rules will extend to include phosphorus and nitrogen also. Improvements including new processing techniques and equipment upgrades are underway to meet these targets.

The aeration tank at the Kawasaki Plant was upgraded in March 2007 and has succeeded in reducing the T-N (Total Nitrogen) content of waste water. Similarly, an upgrade to the aeration tank at

the Tokuyama Plant has reduced the total COD volume from 91 tons in 2006 to 81 tons in 2007. Although the total level of COD discharges across the entire company is roughly unchanged due to increased production of products that generate a high level of waste water by-products, the medium term trend is for gradual reductions.

The shutdown of PVC production at the Takaoka Plant has eliminated the main source of scum and ZEON intends to reduce the amount of industrial waste ultimately disposed of in landfill even further in the future.

ZEON is working to reduce discharges of acrylonitrile and butadiene, which are covered by the PRTR law, and the company achieved a 14% reduction on the previous year. Further investment in improvements planned for 2008 and beyond should reduce emissions of these to less than one ton each in 2010.

Environmental Protection Effects	ZEON Corporation	Comparison Index	Affiliated Group Companies	Comparison Index
Description of effects	Environmental burden index	Compared to previous year	Environmental burden index	Compared to previous year
SOx emissions (tons)	701	▲ 29	703	▲ 28
NOx emissions (tons)	416	▲ 74	417	▲ 63
COD emissions (tons)	194	1	194	1
CO <sub>2</sub> emissions (amount of carbon) (tons)	204,307	2,834	211,583	3,758
Industrial waste sent to landfill (tons)	1,522	322	2,105	480
Total emission of substances subject to the PRTR law (tons)	58	▲ 10	65	▲ 11

#### Scope of accounts

ZEON Corporation  
ZEON Head Office, R&D Center, Takaoka Plant, Kawasaki Plant, Tokuyama Plant, Mizushima Plant

#### Affiliated Group Companies:

Okayama Butadiene Co., Ltd., ZEON Chemicals Yonezawa Co., Ltd., ZEON Logistical Materials Co., Ltd., RIMTEC Corp., ZEON Medical Inc., ZEON North Co., Ltd., ZEON Yamaguchi Co., Ltd., ZEON Polymix Co., Ltd. Otsu Plant and Kawagoe Plant, Optes Inc. Sano Headquarters Plant and Toyama Plant, ZEON Kasei Co., Ltd. Ibaraki Plant

#### Period Covered

April 1, 2007 to March 31, 2008

### Economic Effects

ZEON aims to put the waste resulting from oil by-product production and similar to beneficial economic use through measures such as recycling or burning. Effort is also being put into recycling metal products such as empty drums and other containers. One energy saving measure is that ZEON pays special attention to thermal recovery in its energy intensive distillation processes.

ZEON's subsidiaries and affiliates work hard to find companies for whom their waste products may have valuable uses.

ZEON also sorts materials such as the cardboard used as packaging for raw materials so that these can be on-sold and put to good use.

Reducing costs by recycling catalysts is ongoing and has delivered benefits of around 460 million yen.

Economic Effects Associated with Environmental Preservation Measures (million yen)	ZEON Corporation	Affiliated Group Companies
Description of effects		
Benefits of reclaiming material and utilization as fuel	1,125.0	1,163.9
Cost reduction through energy savings	82.2	85.0
Reduction of industrial waste processing costs	0.0	11.0
Cost reduction through waste-elimination and recovery and reuse of solvents and catalysts	538.6	546.1
<b>Total</b>	<b>1,745.8</b>	<b>1,806.0</b>

#### Scope of accounts

ZEON Corporation  
ZEON Head Office, R&D Center, Takaoka Plant, Kawasaki Plant, Tokuyama Plant, Mizushima Plant

#### Affiliated Group Companies:

Okayama Butadiene Co., Ltd., ZEON Chemicals Yonezawa Co., Ltd., ZEON Logistical Materials Co., Ltd., RIMTEC Corp., ZEON Medical Inc., ZEON North Co., Ltd., ZEON Yamaguchi Co., Ltd., ZEON Polymix Co., Ltd. Otsu Plant and Kawagoe Plant, Optes Inc. Sano Headquarters Plant and Toyama Plant, ZEON Kasei Co., Ltd. Ibaraki Plant

#### Period Covered

April 1, 2007 to March 31, 2008

# Environmental Economic Perspective

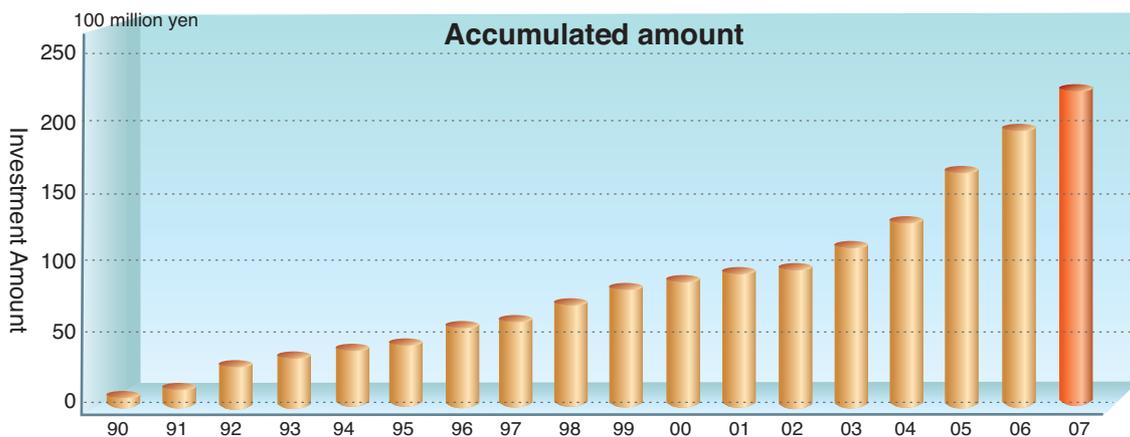
## Environmental Economic Perspective

Not only are we making the environmental investments in pollution prevention equipment and resource and energy conservation equipment that appear in the environmental accounts, we are also working to improve safety through continuing investments in improving safety and eliminating

risks.

Investments have focused on areas like prevention and damage limitation including significant investments in leak prevention, upgrades to fire fighting equipment and measures for dealing with electrical power outages.

The graph below shows the cumulative trend in total environmental and safety investment.



Note that our affiliates also started environment accounting in 2003. Their investment amounts are shown in the chart below.

### Environment and safety investment Amount

2007 Investment Amount (100 Million Yen)	ZEON Corporation	Affiliated Group Companies	Total
Environment-related	10.9	0.9	11.8
Safety-related	15.8	0.3	16.2
<b>Total</b>	<b>26.7</b>	<b>1.3</b>	<b>28.0</b>

#### Scope of accounts

ZEON Corporation  
 ZEON Head Office, R&D Center, Takaoka Plant, Kawasaki Plant, Tokuyama Plant, Mizushima Plant

#### Affiliated Group Companies:

Okayama Butadiene Co., Ltd., ZEON Chemicals Yonezawa Co., Ltd., ZEON Logistical Materials Co., Ltd., RIMTEC Corp., ZEON Medical Inc., ZEON North Co., Ltd., ZEON Yamaguchi Co., Ltd., ZEON Polymix Co., Ltd. Otsu Plant and Kawagoe Plant, Optes Inc. Sano Headquarters Plant and Toyama Plant, ZEON Kasei Co., Ltd. Ibaraki Plant

#### Period Covered

April 1, 2007 to March 31, 2008

# Site Reports

The site reports describe environmental and safety activities at the R&D Center, four plants in Japan, eleven affiliates and four overseas affiliates.

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# R&D Center

The R&D Center plays a central role in the development of technology at ZEON, undertaking research and development to enhance and improve existing products, and into advanced products for various fields including the new field of materials for the electronics and information technology industries. In undertaking this research and development work, the R&D Center takes account of environmental, safety and health considerations from the initial stages of research.

## 2007 Environment and Safety Activity Policy

- (1) Establish safe and stable production technology
- (2) Increase awareness of risks and eliminate accidents and injuries
- (3) Take a rigorous approach to safety management of chemical substances and comply with relevant legal obligations
- (4) Proceed steadily with research and development on environment improvements

## Environment and Safety Activities

The R&D Center concentrated on the following activities in line with the 2007 Environment and Safety Policy.

### Safety inspections for new experiments

A safety inspection committee must approve all new experiments (introduction of new test equipment, introduction of new practices, handling of chemical substances, etc.) beforehand to ensure that the environment, safety and health are maintained and improved in new technology development work.

Prior to conducting the experiment, the applicant conducts a 4R-KY or similar risk assessment of the equipment, procedures, chemical substances, and other considerations to prevent near-miss incidents and equipment problems in new experiments.

### Chemical substance handling restrictions and management

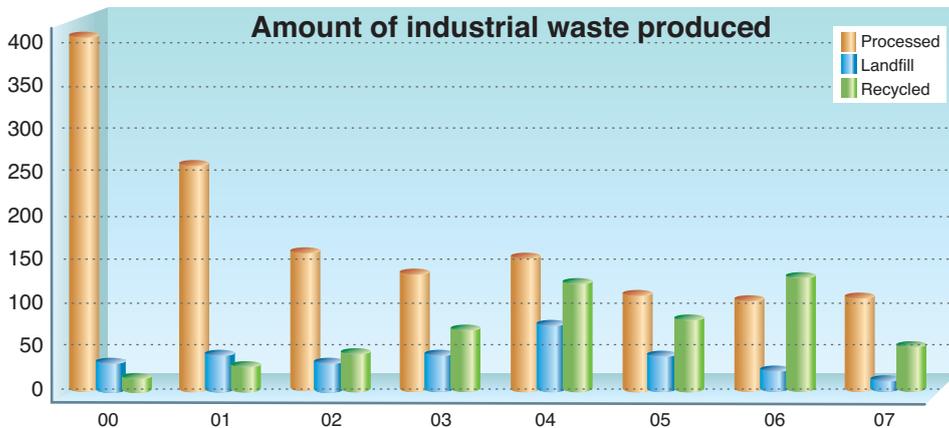
With consideration for the environmental, safety and



health issues associated with the handling of chemical substances, reliable safety management is ensured by an authorization system managed by the Environment and Safety Unit that applies to the purchase, use and disposal of any particularly poisonous, toxic or dangerous chemical substances.

### Reduction of industrial waste

Activities by the R&D Center to reduce industrial waste include fully implementing separate waste collection, encouraging the recycling of waste plastics (which result in high emissions), and encouraging heat recovery. As a result, the amount of industrial waste and industrial landfill are both on a downward trend. We also perform annual inspections to make sure that externally contracted work is being performed correctly.



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**Jun Hasegawa**  
Corporate officer  
General Manager, R&D Center



No. 10 Building

## Environment and Safety Training and Chemical Safety Training

Environment and safety training consists of a combination of classroom-style sessions run by the Environment and Safety Office along with OJT (on the job training) in the workplace.

The training program for new and transferred personnel has been expanding since 2002, with further expansion planned. The last few years have seen zero workplace accidents involving new and transferred personnel.

In 2006 there were four workplace accidents involving middle-ranking researchers with around ten years' experience. The safety training program for middle-ranking researchers has since been upgraded with the result that no accidents or injuries occurred in 2007.

The priority areas for the current financial year are described below.

### Environment and safety training programs

#### 1. New employee training (for all employees who joined the company in 2007)

- (1) Monthly group training covering safety knowledge and practical skills training (total of 10 times)
- (2) "Train the trainer" for OJT instructors of new recruits and recently transferred employees
- (3) New recruit training based on facility-specific training programs



New employee training (fire fighting exercise)



#### 2. Level-specific safety training for middle-ranking researchers

- (1) Safety training by organizational layer (for newly promoted employees and research leaders)
- (2) Hands-on safety training for middle-ranking researchers (out-sourced)

#### 3. Full workforce training

- (1) Accident case study training conducted by former plant managers
- (2) KYT training by external training providers
- (3) Safety training based on the Workplace Injury Elimination Campaign (for all workplaces)

### Chemical Safety Training

1. Training on the handling of chemical substance in accordance with MSDSs (for all workplaces)
2. Chemical substance regulations and safety management (for all employees)
3. Chemical substance safety training (for newly promoted employees)



"The Horror of Being Caught in Machinery!": a practical training course by an external organization

## No accidents or injuries in 2007!

Safety activities proceed side by side with research and development work at the R&D Center responsible for coming up with new technology for the ZEON group, where environmental and safety activities that take account of the environment, safety and health are conducted from the earliest stages of research and development.

The R&D department is working to eliminate accidents and injuries and places a high importance on performing safety audits for new experiments, managing chemical substances and running various safety training. No accidents or injuries occurred during 2007. Further environmental and safety activities are underway to ensure this success in remaining accident and injury free continues in 2008.

**Nobuyasu Ota**  
Manager,  
Environment  
and Safety Unit



# Takaoka Plant

The Takaoka Plant was established in 1956 to produce PVC. It began the production of a specialty synthetic rubber called hydrogenated nitrile rubber in 1983. After

that, it began its foray into new areas and is expanding into the fields of medical products and component fabrication, particularly optical component applications and cycloolefin polymer, an environmentally friendly next generation fluorine solvent. An associated research department was established and has been actively involved in relevant research work. Although production of its original product, PVC, shutdown in March 2008, the plant has plans fill this vacancy by expanding into new areas and is continuing its transformation into an up-and-coming future-oriented plant.

## Environment and Safety Activities

### (1) Reducing Toxic Chemical Emissions

We are making efforts to reduce the amount of emissions through closed process methods and are upgrading our facilities to achieve further reductions in our emissions of un-reacted vinyl chloride monomer during PVC production, and we have achieved the voluntary targets set by the PVC industry association. We are also continuing to reduce emissions of organic solvents used in other manufacturing processes and are investigating new ways of reducing emissions even further.

### (2) Reducing of industrial waste

Around 60% of industrial waste from the Takaoka Plant is excess sludge from the waste water treatment facilities.

We have introduced new technology to reduce sludge volumes and the volume of waste sent to landfill is being reduced by separating out the resins in the sludge for recycling. We are also working with our waste disposal contractors to recycle materials such as waste plastic, glass and oil. Although the volume of waste sent to landfill increased in 2007, this was due to an increase in treatment volumes leading up to the shutdown of PVC production in March 2008. This fact, along with the commissioning of new waste water treatment equipment should see a reduction in 2008.

### (3) Reduction of Air and Water Environmental Burdens

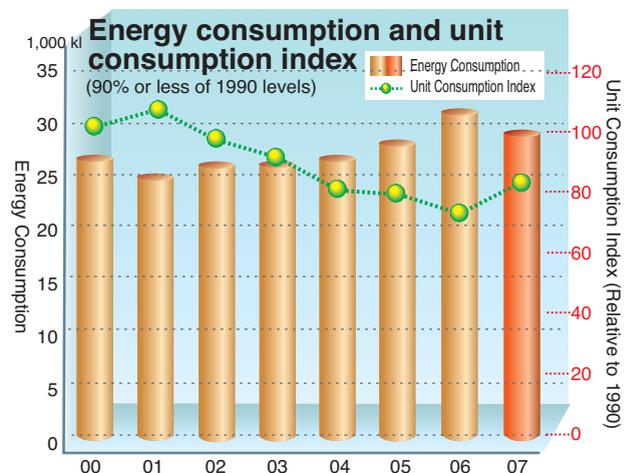
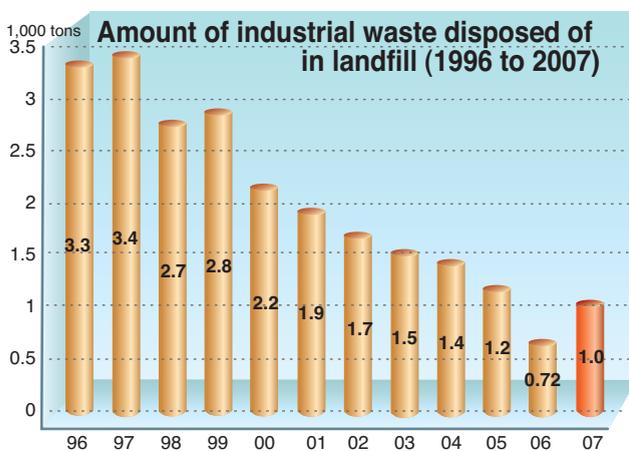
Emission of atmospheric pollutants can vary widely depending on how well boiler operation is integrated with steam requirements in the factory, and stable operation is maintained by managing the plant in such a way as to avoid sudden variations.

We aim to prevent the discharge of water pollutants by maintaining appropriate active sludge treatment conditions to ensure the stable operation of our waste water treatment facilities. We are also working on emergency management measures including installing fault detection and emergency shutdown equipment to prevent the discharge of pollutants if an abnormal situation arises.

### (4) Resource and energy saving

We are working to meet the target of reducing the average unit energy consumption rate for the 2008 to 2012 period to 87% of the 1990 level.

Unit energy consumption achieved the target in 2003 and is on a reducing trend, but although energy use dropped further in 2007, the unit energy consumption actually increased due to lower production. We are working to get everyone to apply their collective knowledge in the area of energy conservation in order to make further reductions and become an energy-efficient plant by operating efficiently with the minimum energy use and by rigorous day-to-day operational management and an awareness of the need for incremental savings.



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**Yoshio Umezawa**  
Corporate Officer  
Plant Manager, Takaoka Plant



## Living Together with the Local Community

### (1) RC dialog

Five companies from Toyama Prefecture affiliated with JRCC held a dialog with the local community on March 1st to describe their daily Responsible Care activities. The day started with the attendees from local councils taking a factory tour and was also attended by numerous people from government, schools, administrative bodies, and non-JRCC member companies who were able to learn about the daily activities carried out at the companies.



Responsible Care dialog with the community in Takaoka, Toyama

### (2) Clean-up activities in conjunction with local government

On May 30th, the plant joined with the local government to hold their fourth "zero trash" day during which they removed weeds and collected empty cans and other litter from nearby streets.



Clean-up in the area around the factory

## Topics for 2007

### (1) Establish a car park in front of the plant

The car park in front of the plant was expanded after consulting with local residents. Although private cars were previously permitted access to the on-site car park, these were moved from the small internal car park to the new car park in front of the plant to improve convenience and make vehicle traffic within the plant safer.

The appearance of the site was also enhanced by planting a lawn in the vacant area obtained by reorganizing the bicycle park and small buildings located in one corner of this area.



Lawn created by shifting the bicycle park

### Environmental data for the Takaoka Plant

		Year	00	01	02	03	04	05	06	07
Vinyl chloride monomer**	Consumption (tons)		44,000	45,200	41,600	40,300	785	656	777	759
	Emissions (tons)		88	53	40	40	1	1	1	1
PRTR applicable Substances**	Consumption (tons)		46,146	47,145	42,338	42,575	1,439	1,312	1,405	1,277
	Emissions (tons)		127	96	83	85	4	4	5	4
Industrial waste	Waste produced (tons)		7,904	7,569	6,068	5,255	5,143	4,358	3,536	3,751
	Disposal in landfill (tons)		2,176	1,909	1,692	1,497	1,437	1,114	895	1,016
Atmospheric emissions	CO <sub>2</sub> emissions (tons-C*)		17,811	16,772	17,494	16,856	17,760	17,567	17,638	16,609
	SO <sub>x</sub> emissions (tons)		39	22	30	53	41	33	51	52
	NO <sub>x</sub> emissions (tons)		59	47	56	70	69	31	50	49
Waste water	Total effluent waste water discharge (thousand m <sup>3</sup> )		5,545	6,158	6,464	6,649	6,441	5,901	6,587	6,919
	COD emissions (tons)		57	36	35	46	29	31	33	42
	COD emissions (tons)		2	2	4	3	1	1	1	1
	Total phosphorus discharge (tons)		5	5	7	25	15	15	16	6
Energy	Total nitrogen discharge (tons)		27,139	24,897	26,462	26,341	27,494	28,692	31,417	28,967
	Total amount (crude oil equivalent, kl) Unit consumption index (1990 = 100)		101	106	98	90	83	80	75	83

\*Amount of carbon equivalent

\*\* The totals for vinyl chloride monomers and substances subject to the PRTR law were modified in 2004 to show consumption and emissions for ZEON Corporation only and to exclude Shin Dai-ichi Vinyl Co., Ltd. (a contract manufacturer).

# Kawasaki Plant

which is a special synthetic rubber. In the 45 years since then the plant has been supplying the public with high-quality products as our principal site for synthetic rubber and latex production. Being located in the Greater Tokyo metropolitan area, the plant is involved in ongoing Responsible Care activities and has an active program of improvement activities aimed at reducing environmental pollution. In 2008 we continued our efforts to be an environmentally friendly plant with further reductions in toxic chemical emissions, atmospheric and water pollution, and industrial waste output.

The Kawasaki Plant has a long and successful history. In 1959 it was the first factory in Japan to industrialize “acrylonitrile butadiene rubber”,

## Environment and Safety Activities

### (1) Reduction of Toxic Chemical Emissions

Processing volumes of butadiene, the main raw material in synthetic rubber and synthetic latex, increased due to full-scale operation of the catalytic combustor installed in 2004 and further adoption of closed production processes. Despite this, emissions reduced from 8.5 tons in 2006 to 4.5 tons in 2007. The target for 2008 is to reduce emissions down to 4 tons. Full operation of a new acrylonitrile recovery process commenced in 2005. Since then, the utilization of the recovery system has been further improved. Emissions in 2007 reduced from 24 tons and the target for 2008 is 13 tons.

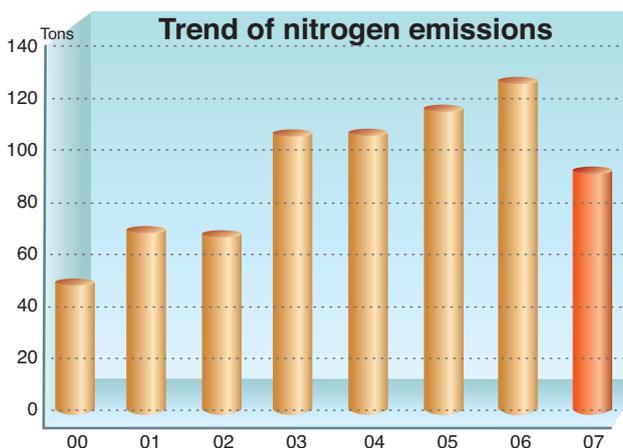
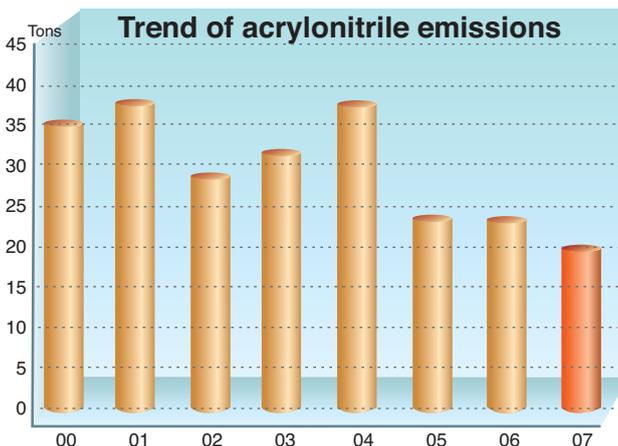
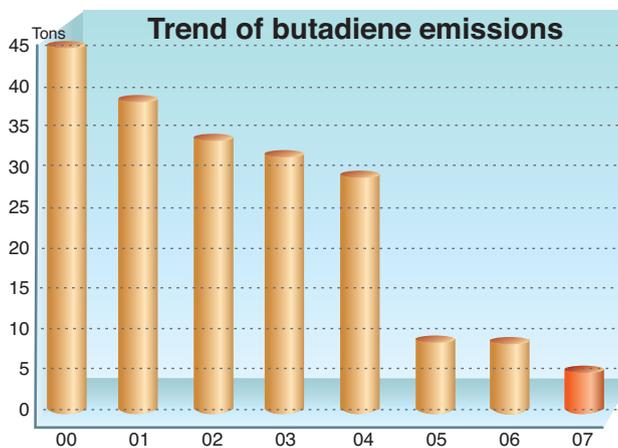
Continuing technical improvements are expected to reduce butadiene and acrylonitrile emissions still further.

### (2) Reduction of industrial waste

The plant is working to reduce the volume of industrial waste by sorting waste for collection and by improving reuse of resources (recycling and heat recovery). Although a new incinerator was completed in 2007 and is operating reliably, unfortunately this work resulted in more waste being sent to landfill with an increase from 190 tons in 2006 to 400 tons in 2007. The plant will continue to strive to operate the new incinerator reliably and reduce industrial waste volumes.



Completed new incinerator



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**Yoshiyuki Mitsuira**  
Corporate Officer  
Plant Manager, Kawasaki Plant



### (3) Reduction of Air and Water Environmental Burdens

To reduce atmospheric pollution, we are working to maintain reliable operation of our new incinerator to reduce emissions of nitrogen oxides, carbon monoxide, soot, and other pollutants.

To reduce water pollution, we have been studying how to operate the new waste water treatment tanks we added in 2006 and these entered full operation in 2007. As a result, we succeeded in improving the total nitrogen removal rate from 30% to more than 50%. Our aim in 2008 is to optimize the operating practices further and raise this rate even higher.

### (4) Resource and energy saving

We are working to meet the target of reducing the average unit energy consumption rate for the 2008 to 2012 period to 87% of the 1990 level. Although improvements have already been achieved through large-scale investments including an upgrade to our cogeneration facilities, we are continuing to work on further improvements despite greater energy use at our non-production facilities and the operation of equipment that improves our environmental performance.

### Living Together with the Local Community

- (1) With the aim of being a plant that is open to the community, we received visitors both from Japan and overseas and invited neighboring companies, neighborhood association committees, and others to join us in plant welfare initiatives.
- (2) With the aim of being a plant that is rooted in the local community, we conducted clean-ups of the area around the plant as part of our program of



Site visit from Vietnamese students

beautification work. In 2007, these were conducted in cooperation with neighboring companies.

- (3) Twice a year, we carry out emergency drills in cooperation with the emergency services to practice dealing with accidents and injuries. We also undertook an initial exercise in cooperation with the public fire fighting and other emergency services.

### Our aim is to be open to the community

Our aim as a factory is to be rooted in the local community and open to the public. We are also striving to make our plant environmentally friendly.

**Kazufumi Suzuki**  
Manager, Environment and Safety Unit



### Environmental Data for the Kawasaki Plant

\*Amount of carbon equivalent

	Year	00	01	02	03	04	05	06	07
Harmful substances	Butadiene consumption (tons)	30,649	29,058	27,335	29,876	30,726	29,694	28,278	28886
	Butadiene emissions (tons)	45	39	34	32	29	8	9	5
	Acrylonitrile consumption (tons)	10,837	11,257	10,937	12,336	12,953	12,345	12,446	13030
	Acrylonitrile emissions (tons)	36	38	29	32	38	24	24	20.0
PRTR applicable Substances	Consumption (tons)	63,273	57,429	55,629	59,001	59,530	58,960	56,751	55278
	Emissions (tons)	89	84	69	70	73	54	56	69
Industrial waste	Waste produced (tons)	52,115	48,606	70,261	63,759	44,758	37,158	47,826	45395
	Disposal in landfill (tons)	60	50	230	24	238	520	189	392
Atmospheric emissions	CO2 emissions (tons-C <sup>*</sup> )	13,911	13,356	13,226	13,077	13,077	13,894	11,918	12955
	SOx emissions (tons)	1	2	1	1	3	1	2	1
	NOx emissions (tons)	28	29	29	27	28	18	28	17
Waste water	Total effluent discharge (1,000m <sup>3</sup> )	1,942	1,942	1,726	1,825	2,006	1,906	1,988	1970
	COD emissions (tons)	49	56	49	57	53	52	55	58
	Total phosphorus discharge (tons)	0	0	1	1	1	1	1	1
	Total nitrogen discharge (tons)	49	70	68	107	107	118	125	93
Energy	Total amount (crude oil equivalent, kl)	22,806	21,966	20,911	20,955	20,836	20,490	20,092	19982
	Unit consumption index (1990 = 100)	107	108	110	101	99	103	101	102

# Tokuyama Plant

The Tokuyama Plant started operations in 1965. The plant produces butadiene using the "ZEON Process of Butadiene" (GPB), an extraction distillation technology developed by ZEON. The butadiene is used as a raw material in the manufacture of synthetic rubber and synthetic latex that is then sold on the global market. The plant was the first in the world to produce polymerized toner commercially and has successfully expanded production, with further equipment to be installed to meet strong demand. Given our close proximity to residential areas, we place considerable importance on maintaining a dialogue with the local community and the entire workforce is committed to making Tokuyama Plant an environmentally friendly factory that is trusted by the community for its safe and reliable operation.

## Environment and Safety Activities

### (1) Reduction of Toxic Chemical Emissions

Equipment to burn waste gas produced by the plant in the boiler has been installed with the aim of significantly reducing atmospheric emissions of toxic substances. The plant is committed to performing more activities to further reduce emissions.

### (2) Reduction of Industrial waste

Our zero-emission target for reducing landfill disposal of industrial waste is set at 80 tons or less, this being 10% of the 1995 figure of 800 tons. Thanks to improvements aimed at achieving this target, we have surpassed it and succeeded in reducing the volume down to 77.4 tons.

### (3) Reduction of Air and Water Environmental Burdens

#### 1) Air

Investment in environmental enhancements to our boiler has succeeded in reliably reducing SOx and NOx emissions. We are planning further improvements and will strengthen management to ensure that these low levels are maintained in the future.

#### 2) Water

Improvements in waste water treatment and elsewhere have seen a year-by-year reduction in emissions of COD and total nitrogen. An upgrade to the waste water treatment equipment in February 2008 is expected to bring a further reduction in emissions.

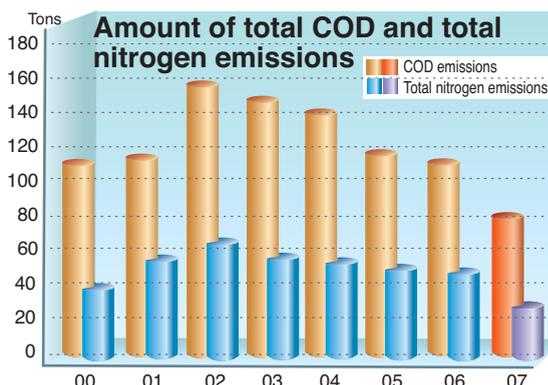
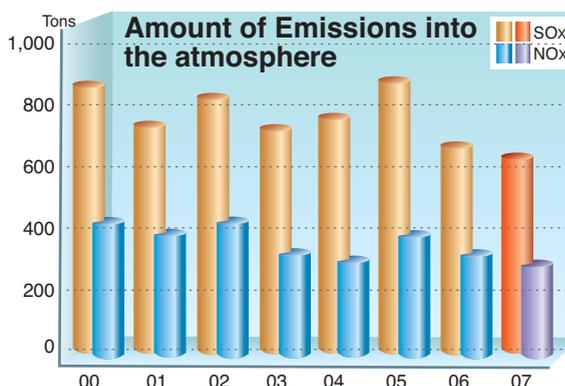
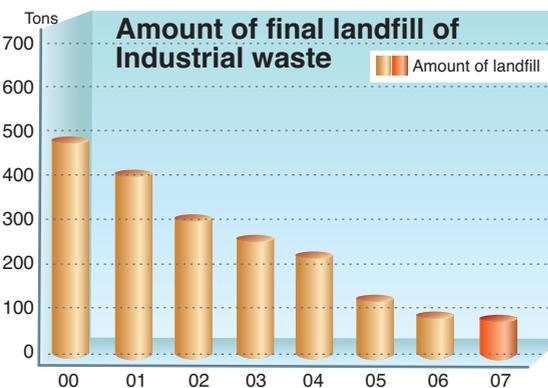
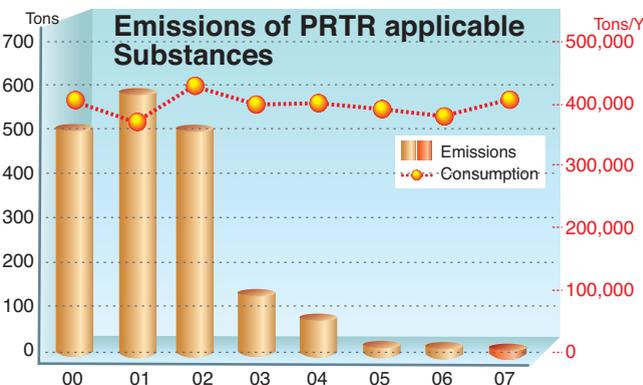
## Working to create a plant that is friendly to the environment and the community

The beginning of the financial year is a particularly busy time for the people responsible for environmental management. We also pay close attention to the annual trend figures in the various environmental management reports. Fortunately, although we were

relieved that the results for 2007 were particularly good, we are also keenly aware that we failed to reach our energy savings targets and therefore finding ways to raise awareness of energy conservation amongst all employees is a top priority.



**Eiji Morita**  
Environmental Officer  
Environment and Safety Section



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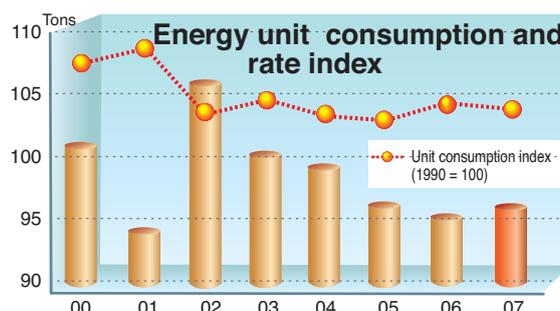


**Hiroshi Asahina**  
Corporate Officer  
Plant Manager, Tokuyama Plant



#### (4) Resource and energy saving

Although we are working to bring the skills of the entire workforce to bear on the objective of reducing the average unit energy consumption rate for the 2008 to 2012 period to 87% or less of the 1990 level, we have yet to achieve this target. We are continuing to work day and night to look at energy saving from every different angle, including the introduction of revolutionary new technology.



### Living Together with the Local Community

#### (1) Summer Festival (Japanese dance)

Japanese dance is a regular event at the Tokuyama Plant and has an established place in the community where it is a highly valued opportunity to mix with local residents. Although this year's event was threatened with heavy rain, the rain abated just one hour before the proceedings were due to start and even though the dancing was cancelled, the bazaar proved even more popular than in the past.



Scene from dance festival

#### (2) Fifty-five employees volunteer for Higashi-gawa river clean-up campaign

An annual clean-up is held for the Higashi-gawa river that runs past the plant. The river clean-up (which involves 400 to 500 people) is organized by the local government and ZEON has been volunteering its help for the last three years. Much sweat has gone into working alongside local residents to tidy up the river. Many thanks were received from the local residents which helped the volunteers feel a stronger bond with the community.



Volunteers help with Higashi-gawa river clean-up

### Environmental Data for the Tokuyama Plant

\*Amount of carbon equivalent

Year		00	01	02	03	04	05	06	07
Harmful substances	Consumption (tons)	406,473	361,690	432,694	398,557	398,387	395,821	380,312	407,934
	Emissions (tons)	505	577	495	126	67	23	23	20
PRTR applicable Substances	Butadiene (tons)	25	35	46	24	20	17	17	17
	Acrylonitrile (tons)	10	4	5	0.7	0.3	0.8	0.7	0.7
Industrial waste	Waste produced (tons)	3,095	2,676	2,709	2,916	4,042	3,650	5,151	10,211
	Disposal in landfill (tons)	469	401	295	260	216	134	81	77
Atmospheric emissions	CO <sub>2</sub> (tons-C <sup>*</sup> )	75,651	75,632	78,253	73,577	72,834	71,615	70,352	70,790
	SO <sub>x</sub> (tons)	864	733	822	726	756	870	674	647
	NO <sub>x</sub> (tons)	411	388	424	326	310	385	315	280
Waste water	Total effluent discharge (1,000m <sup>3</sup> )	6,725	8,619	8,361	8,904	9,822	8,080	8,293	6,331
	COD emissions (tons)	109	110	157	149	138	95	91	81
	Total phosphorus discharge (tons)	0.6	0.8	0.3	0.7	0.8	0.8	0.5	0.6
	Total nitrogen discharge (tons)	39	54	62	54	53	50	47	27
Energy	Total amount (crude oil equivalent, kl)	101,560	94,449	106,249	100,057	99,088	96,729	95,281	96,933
	Unit consumption index (1990 = 100)	107.7	108.3	103.5	104.7	103.8	103.0	103.9	103.6

# Mizushima Plant

technology for our butadiene extraction facilities which has been licensed for use at 47 plants in 19 countries around the world, the plant works closely with our many customers to meet their diverse requirements with products derived from our "C5 Fraction Total Use Business" which include optical material resins (used in LCD displays, optical disks, camera lenses, CD pickups and elsewhere), aromatic chemicals (including jasmonic and green note chemicals), and petroleum resins (including binder for traffic paint and adhesive tape).

## Topics

Mizushima Plant rigorously pursues safe and reliable production through the application of innovative technology and aims to be a plant that is always trusted by the local community. As part of this effort, the plant constructed a new Integrated Production Center (IPC) in November 2007. In the first phase of this plan, we relocated approximately half of our previously scattered production departments to the IPC in April 2008 to take the load off the plant and to standardize and systematize our operations including the operational know-how of our experienced staff. Also, for its ease of use by the elderly and disabled, the Integrated Production Center was certified as a "compliant facility" under the "Kurashiki City Public Welfare Infrastructure Regulations" in the city building code.



Integrated Production Center - external view



Integrated Production Center - internal view



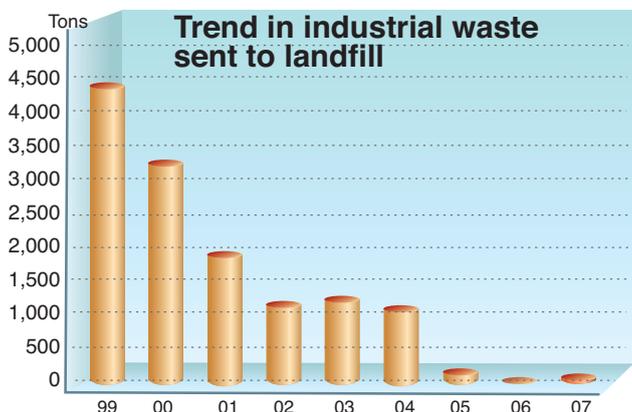
Symbol certifying the IPC as a people-friendly city

## Environment and Safety Activities

The plant works to create a safe and stable workplace by following the Plant Manager's "ABC Safety System" (being sure to perform the basics properly).

### (1) Reduction of industrial waste

ZEON is one of the investors in Mizushima



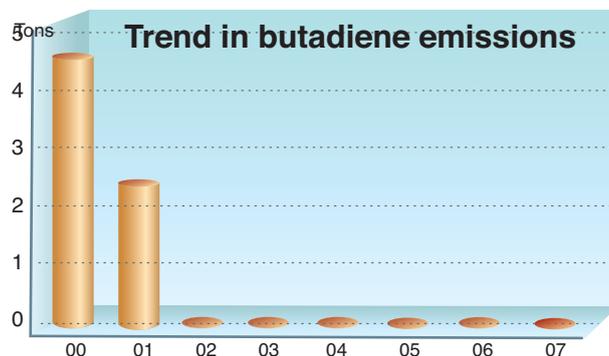
Mizushima Plant is ZEON's flagship site and represents the core of our in-house technology which is unrivaled by our competitors. It was established in 1968 as a part of the Mizushima Industrial Zone in Kurashiki City. Starting with the

Ecoworks(\*1), a waste processing facility based on resource recycling that started operation in 2005. Since then, the volume of waste ultimately disposed of in landfill has been dramatically reduced from 1,032 tons in 2004 to only 19 tons in 2007. We also continue to use the 3Rs (reduce, reuse and recycle) to reduce waste further.

\*1 A combined waste processing facility that handles both ordinary waste from the Kurashiki municipality and industrial waste from the Mizushima industrial complex. The facility is jointly owned by 10 companies from the industrial complex.

### (2) Reduction of toxic chemical emissions

The plant discontinued the use of benzene in 2001 and succeeded in achieving zero emissions of butadiene in 2002 after switching to a closed processing system with recovery. We are dedicated to ongoing development of environmental strategies including measures to reduce VOC emissions.



### (3) Reduction of Air and Water Environmental Burdens

Improved management of the waste water produced by the individual facilities has helped minimize load fluctuations at the waste water treatment plant, thereby enabling better treatment of waste water.

### (4) Resource and energy saving

We are working to meet the target of reducing the average unit energy consumption rate for the 2008 to 2012 period to 87% of the 1990 level. Although this work only achieved a consumption rate of 93% of the 1990 level in 2007, an upgrade to a large plant heat recovery system in March 2008 is expected to show its benefits in the 2008 result. We are planning further reductions in unit energy consumption including reducing steam use and working on heat recovery strategies.

We have also switched delivery of some products from truck to rail. This shift to a different transportation mode is aimed at reducing the burden on the environment through more efficient transportation in the product delivery process. As a result, we received a "Mode Shift Shipper Excellence Award".

Founded: 1968  
Address: 2767-1 Aza niihama, Shionasu, Kojima,  
Kurashiki City, Okayama Prefecture 711-8511  
Tel: 086-475-0021 Fax: 086-475-1169

**Hiroshi Takegami**  
Director and Corporate Officer  
Plant Manager, Mizushima Plant



## Living Together with the Local Community

The plant's objective is to "create a plant that is trusted by the local community". It has an active involvement with the community, including supporting and participating in the events of residents' associations, and public activities such as meetings to report business activities and meetings to explain plans for new facilities. Further, the plant joins with neighboring companies in the Mizushima Industrial Zone to perform joint disaster planning to reassure the people living in the local community. We served as the regional sponsor for Okayama in the Responsible Care Local-Area Dialogue Meeting in 2007, held factory visits and walking tours with local residents and helped in local clean-up campaigns around the factory and in surrounding areas. We are nurturing closer integration with the local



Factory inspection and walking tour



Super Science High School

area through joint public-private-academic sector initiatives such as factory tours of the Mizushima Plant and classroom sessions extolling the importance and fun of science for the benefit of science students at the Kurashiki Amagi prefectural high school in Okayama prefecture (which is designated as a Super Science High School\*2 under a Ministry of Education, Culture, Sports, Science and Technology program). These initiatives, which continue in 2008, are designed to stimulate an interest in science and technology among young people.

\*2 A program run by the Ministry of Education, Culture, Sports, Science and Technology which acknowledges high schools with a strong focus on science and math subjects. The program is designed to identify and nurture the potential leading scientists of the future.

## Complying with environmental standards and creating a plant that is trusted by the community

Nurturing and protecting the beautiful natural environment of the Seto Inland Sea is an important duty for our plant. Complying with environmental standards and making steady improvements on past performance underlie the first steps to winning the trust of the community and this is something we intend to continue.



**Ryujiro Kinoshita**  
Environmental Officer  
Environment and Safety Section

### Environmental Data for the Mizushima Plant

\*Amount of carbon equivalent

	Year	00	01	02	03	04	05	06	07
Harmful substances	Butadiene consumption (tons)	146,879	143,583	153,919	163,521	149,435	154,510	154,899	150,281
	Butadiene emissions (tons)	4.7	2.4	0	0	0	0	0	0
PRTR applicable Substances	Consumption (tons)	489,028	266,725	303,967	342,931	335,458	336,308	343,930	317,673
	Emissions (tons)	23	7	6	2	1	1	1	1
Industrial waste	Waste produced before reductions (tons)	57,975	55,821	62,575	56,398	60,975	57,425	57773	58,983
	Waste produced after reductions (tons)	5,425	5,807	6,256	6,142	8,366	7,217	7,891	6,750
	Disposal in landfill (tons)	3,260	1,859	1,091	1,185	1,032	29	9	19
Atmospheric emissions	CO <sub>2</sub> emissions (tons-C*)	95,371	90,016	102,320	109,147	111,326	111,194	109,725	103,091
	SO <sub>x</sub> emissions (tons)	0.5	3.3	1.9	3.5	3	1	3	1.5
	NO <sub>x</sub> emissions (tons)	121	70	58	76	81	68	87	70
Waste water	Total effluent discharge (1,000m <sup>3</sup> )	2,148	2,108	1,946	2,113	2,290	2,242	2,559	2,550
	COD emissions (tons)	15	13	13	13	14	14	15	13
	Total phosphorus discharge (tons)	0.6	0.5	0.4	0.5	1.0	0.5	0.7	0.7
	Total nitrogen discharge (tons)	19	22	23	21	22	13	20	21
Energy	Total amount (crude oil equivalent, kl)	138,178	128,654	145,725	154,962	159,927	160,179	175,037	164,994
	Unit consumption index (1990 = 100)	104	101	97	94	93	93	92	93

## ZEON Kasei Co.,Ltd

In 1981 the Manufactured Goods Division of ZEON was made independent and established as ZEON Kasei Co., Ltd. The company has grown steadily since then and has taken the lead role within the ZEON group in the field of manufactured goods.



**Yoshiro Ogura**  
President



ZEON Kasei's Ibaraki plant

### Environment and Safety Activities, and Related Topics

#### Retrofitted insulation using ZEON Siding® (reducing the burden on the environment)

Because of the high cost of winter heating, home builders in Hokkaido are doing their utmost to improve the Q value (heat loss coefficient) for homes and reduce CO<sub>2</sub> emissions.

ZEON Siding® is a plastic siding (cladding) material produced from PVC with features that include excellent durability and light weight during building work. These benefits have seen the product being widely adopted as an exterior cladding material for retrofitted insulation where the insulation is fitted externally (attached to the outside of the building), not only for homes but also for small to medium sized buildings.

The photograph shows the Odori Haimu building in Sapporo, Hokkaido where ZEON Siding has been used to retrofit insulation.



Odori Haimu

#### Combined ISO9001 certification for headquarters, plant, R&D center and Hokkaido office (quality assurance enhancement)

ISO9001 certification

ZEON Kasei has extended the quality management system it had previously operated at its manufacturing site (Ibaraki plant) to its sales (headquarters and Hokkaido office) and R&D (ZEON Manufactured Goods R&D Center) departments. These operations were audited by an accredited external auditor in March 2008 and received certification in May 2008.

ZEON Kasei operates an integrated quality assurance system that covers production, sales and engineering and will continue to supply products that satisfy its customers.

### Company Profile

- **Name** ZEON Kasei Co., Ltd.
  - **Established** October 1, 1981
  - **Capital** 462.55 million yen
  - **No. of Employees** 63 (Ibaraki ZEON Kasei Co., Ltd.\*: 97)
  - **Head office** 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005(Shin Marunouchi Center Building)  
TEL.03-5208-5111 FAX.-3-5208-5290
  - **Locations** Ibaraki Plant (Ibaraki ZEON Kasei Co., Ltd.), Hokkaido Office
  - **Main business** Synthetic resin compounds, films, surface emission materials, heat dissipation materials, construction materials, packing materials and deodorants
- \* Ibaraki ZEON Kasei Co., Ltd. is a wholly owned subsidiary of ZEON Kasei Co., Ltd. and is a contract manufacturer for ZEON Kasei Co., Ltd.

### Activities with the Local Community

#### Ibaraki plant emergency response drill (occupational health and safety)

The Ibaraki plant held a simultaneous emergency response drill on November 26, 2007. The drill was carried out under the instruction of the local Bando Fire Department (Seinan Fire Fighting Corporation). The drill allowed employees to practice using dry-chemical fire fighting equipment.

Following on from the previous year, this was the second emergency response drill to be held in conjunction with the local fire department and we hope they will continue. A drill using hoses is planned for 2008.

#### Iwai Masakado Half-Marathon (region, community)

The Iwai Half-Marathon held in Bando on November 11, 2007 included two participants from our Ibaraki plant.

Although the day of the race was marred by rain, both competitors completed the race without incident.

### Gaining the trust of customers

We are responsible for putting in place the environmental, quality and safety systems that allow us to deliver products that further improve customer satisfaction based on a quality policy of "contributing to society by supplying manufactured products that satisfy our customers through continuous improvement".

**Katsunori Sato**  
Environment,  
Safety and Quality Group,  
Engineering Department



# ZEON Polymix Co., Ltd

ZEON Polymix Co., Ltd. was first established as Kinki Rubber Processing, Co., Ltd. in 1967 in order to expand into the carbon master batch (CM) field as a part of the ZEON's rubber business development. In 1989 it merged with Higashi Rubber Processing Co., Ltd. and changed its name to ZEON Polymix Co., Ltd.

The CM produced at ZEON Polymix is used widely with applications that include parts for office and industrial equipment, especially automotive parts, and lifestyle and leisure products.

ZEON Polymix has established a "SHEQMS strategy" that covers the requirements for safety and health, environmental, and quality management systems. This involves specific activities aimed at achieving targets based on each year's President's strategy. The slogan for the President's strategy in 2008 is "let's make ZEON Polymix a high-quality company". Based on this slogan, specific targets have been set for the entire company for short-term business objectives, medium-term business objectives and strengthening business fundamentals respectively. The following items describe the measures being taken based on the medium-term business objectives of "improving the work environment" and "putting systems in place to eliminate the causes of CM quality defects".

## Kawagoe plant

### Establishing a workplace environment that makes working easy

The item below describes what Kawagoe plant has done to set up its production lines to provide its employees with a workplace environment that makes working easy. A key element was the completion of a meeting room where the people who work at the plant can gather in a single venue.



Meeting room

Air shower

### Meeting room strengthens communication

The Kawagoe plant is overhauling its production line and infrastructure based on the 2008 President's strategy of "improving the work environment".

To prevent problems due to inadequate day-to-day communications, a meeting room large enough for the entire production department was completed in June. Air showers have also been installed based on environmental and hygiene considerations. The meeting room is always kept clean and is used extensively for internal meetings, handover meetings, and as a place to go during breaks.

**Mr Tajima**  
CF,

Production Section  
Kawagoe plant



**Makoto Yamamoto**  
President



Kawagoe plant



Otsu plant

## Company Profile

- **Name** ZEON Polymix Co., Ltd.
- **Established** April 7, 1967
- **Capital** 240 million yen
- **No. of Employees** 90
- **Head office** 941-1 Kamiigusa, Kawajima-machi, Hikigun, Saitama Prefecture 350-0152  
TEL:049-297-0715 FAX:049-297-8451
- **Locations** Kawagoe plant  
Otsu plant
- **Main business** Molding CM and synthetic rubber CM (semi-finished rubbers supplied to manufacturers of auto parts and other molded and processed rubber products) Polyblend heating

## Otsu plant

### Reduction of quality claims

The item below describes the "3S, 3-Tei, Visibility" program at the Otsu plant aimed at eliminating quality claims.

The program uses periodic quality patrols to check whether management is being maintained.



After improvement (pallet location specified and constant instructions issued)

### Activities aimed at eliminating quality claims

In response to the 2008 President's strategy of "putting systems in place to eliminate the causes of CM quality defects", the Otsu Plant has undertaken a "3S, 3-Tei, Visibility" program aimed at eliminating quality claims. One category of claims relates to contamination with impurities but the cause is not well understood. This was due to lax management of the production line. We started an improvement activity that allows us to see the status of managed items at a glance and it is gradually proving its worth.

The embeddedness of the "3S, 3-Tei, Visibility" program is checked by the monthly quality patrol and we have put considerable effort into ensuring that we are thorough in the other two Ss (Seiketsu (hygiene) and Shitsuke (discipline)) also. By adopting these measures, our aim is to upgrade the production lines we administer and eliminate quality claims.



**Mr Takaishi**  
Manager,  
Production Section  
Otsu Plant

# Optes Inc.

Optes Inc. was established in 1990 as a joint venture between ZEON and Sekinos Co., Ltd., as a strategic processor of a cycloolefin polymer that had been developed by ZEON. In 1997, Optes Inc. became a wholly-owned subsidiary of ZEON. The company's products (which include ZEONOR film®, ZEONOR® diffusion panels, large aspheric mirrors, lenses and prisms) are derived from advanced technology and are highly regarded in the optics industry.



Toyama plant



Sano Headquarters plant



Noriaki Wakamatsu  
President

### Company motto

"Applying our sincerity, ingenuity and enthusiasm to make Optes an international company in which every employee can take pride"

### Management creed

"To make an extensive contribute to the world by producing distinctive products that are friendly to the environment using distinctive technology that is not copied from elsewhere and that our rivals cannot imitate"

## Environment and Safety Activities, and Related Topics

### Consideration for the environment

The plant at the Himi Production Division established in 2007 was constructed based on consideration for global warming and environmental protection from the design phase. The wind turbine was installed to remind all employees of the importance of energy. The electricity it produces is put to good use.



Himi Production Division  
Toyama Plant

## Living Together with the Local Community

Himi Production Division participated in a community clean-up of the roads organized by the local government which provided the opportunity to contribute to the community and communicate with local residents.



Clean-up

## Company Profile

- **Name** Optes Incorporated
- **Established** April 2, 1990
- **Capital** 400 million yen
- **No. of Employees** 395
- **Head office** 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-8246 (Shin Marunouchi Center Building)  
TEL:03-3216-1793 FAX:03-3216-1777
- **Locations** Sano Headquarters plant  
Toyama plant (Takaoka and Himi Production Division)
- **Main business** ZEONOR film®, ZEONOR® diffusion panels for LCD backlights, large aspheric mirrors, parts for medical diagnostic systems such as blood tester cells, prisms, microlenses, and other optical components



ZEONOR film



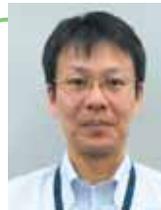
ZEONOR diffusion panels

## Environment and Safety Activity Topics

Optes received numerous awards for its health and safety activities in 2007 at the All ZEON Safety Conference. The company will continue to strive to achieve 100% yield with zero accidents and zero injuries, while maintaining a strong emphasis on safety, environment and quality.



4R-KYT training (Sano plant)



**Atsushi Nishibe**  
Technology Section Manager  
(with managerial responsibility)  
Tokyo Headquarters

## Supplying distinctive products that are friendly to the environment

Our products are engineered for energy conservation from the design stage and contribute to reducing CO2 emissions. We will continue to work at contributing to the world by coming up with products that are friendly to the environment.

# ZEON Chemicals Yonezawa Co., Ltd.

ZEON Chemicals Yonezawa Co., Ltd. was established in 1996 to produce fine chemical products and commenced production of synthetic aromatic chemicals using leaf alcohol as the main raw material. Since 1988 it has also been producing liquid compounds for reaction injection molding that use dicyclopentadiene as their main raw material. Also, the opening of ZEON's new chemical research buildings in April 2006 has led to growth in contract research and development work. In 2007, the company celebrated the tenth anniversary of its founding.



Overview of plant



**Hiroshi Fujisawa**  
President

## Environment and Safety Activities, and Related Topics

### ISO activities

The company received ISO9001 and ISO14001 accreditation in June 2006 and has related activities ongoing. Environmental activities have included work on reducing waste drums, paper and other refuse.

### Safety training

ZCY aims to achieve zero injuries based on a "can-do" spirit by conducting training programs such as point and shout training, 4R-KY training and forklift safety training that allow work to be done more safely.



4RKY training



Forklift safety training



Fire fighting drill

## Living Together with the Local Community

### Sponsorship of the Yonezawa Snow Lantern Festival

Since 1999, ZEON Chemicals Yonezawa has supported the snow lantern festival, which is a traditional winter event in Yonezawa. Both employees and their families come together every year to build two snow lanterns. Although no snow lanterns were built last year due to an absence of snow brought on by the unusually warm winter, we were able to participate as normal this year.



Employees and their families



Scene from snow lantern making

### Participation in local volunteer clean-up campaign

To express our thanks to the community on the tenth anniversary of our foundation, a volunteer clean-up campaign was organized for the vicinity of the Uesugi Shrine.



Photograph of clean-up participants with rubbish collected

### We're looking after nature!

Living amongst the natural beauty of Yonezawa makes us particularly conscious of environmental protection.

We are working every day with the aim of being number one in our region for the environment and safety.

**Terunobu Morikawa**  
Technology Section Manager and  
Manger of the Environment and  
Safety Office



# ZEON Logistical Materials Co., Ltd.

ZEON Logistical Materials Co., Ltd. was previously a part of ZEON Kasei Co., Ltd., a company formed in 1981 from what was previously the Manufactured Goods Division of ZEON. In 2003, ZEON Kasei Co., Ltd. decided in turn to spin out its logistical materials business and so established ZEON Logistical Materials Co., Ltd. One of the company's main products is a returnable container called "STEC®". This ground breaking logistics tool is highly regarded in a range of industries and makes a significant contribution to environmental protection as well as delivering economic benefits by streamlining storage and management while reducing the cost of packing and cargo handling.



Yamaguchi plant



**Hitoshi Ozawa**  
President

## Exhibit at 2007 FPD Show

ZEON Logistical Materials was represented at the 2007 FPD Show with an exhibit that focused on roller-transportable STEC® containers and promoted the company's new product development capabilities and the high quality of its STEC® products. The booth received approximately 400 visitors over the three-day show.

The STEC® range is highly regarded by customers for its resource-efficient and space-saving characteristics that include being collapsible, returnable and stackable.



2007 FPD (Flat Panel Display) Show

## Shunan plant

Shunan plant was established in July 2005 as a dedicated facility for maintenance of synthetic rubber containers. The plant aims to be a safe and reliable supplier that coexists harmoniously with the local community and has a strong environmental emphasis demonstrated by its target of 100% recycling.



Shunan plant

## Company Profile

- **Name** ZEON Logistical Materials, Co., Ltd.
- **Established** July 1, 2003
- **Capital** 100 million yen
- **No. of Employees** 40
- **Head office** 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005 (Shin-Marunouchi Center Building)  
TEL 03-5208-5167 FAX 03-5208-5296
- **Locations** Yamaguchi plant  
Shunan plant
- **Main business** Design, production and sales of STEC box containers and maintenance of returnable container products

## Development and Marketing of New Environmentally-friendly Products

ZEON Logistical Materials is developing new returnable containers and containers for PET bottles and storage of preform (products that are pre-formed prior to blow molding) products, and containers based on the marketing design concepts of being (1) lightweight, (2) low-cost, (3) resource-efficient, (4) easy to use, (5) durable, (6) designed to withstand compression and (7) safe.

The company supplies returnable containers that are designed to weigh 25% less than previous containers, require fewer resources (which is reflected in their cost), and have the durability and ability to withstand compression that make them easy to use.



Returnable container

## Focusing on "creating" rather than "making"!

We manufacture and sell collapsible and returnable containers based on our quality strategy of "creating STEC products that our customers delight in using".

**Nobuyoshi Kado**  
Production Section Manager and  
Design Section Manager



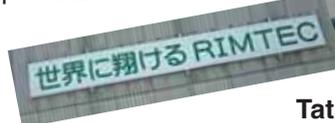
# RIMTEC Corporation

RIMTEC Corporation was formed from the merger of the RIM Division of ZEON with Teijin Metton Co., Ltd. The company supplies the PENTAM® and METTON® compounded fluids for reaction injection molding using dicyclopentadiene as the main raw material.



Tatsuhiko Iwamoto  
President

RIMTEC Corporation plant



## Providing environmentally-friendly molding liquid compounds and molded products

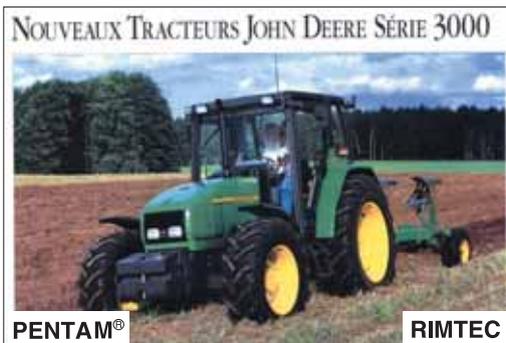
Resin with dicyclopentadiene as its main component combines a strength equivalent to general-purpose engineering plastic with the high productivity of the reaction injection molding method of production.

Components formed from this material consist entirely of hydrocarbons which means they can be used as a clean source of heat energy because the volume of dioxins produced when they are incinerated is very low.

The reaction injection molding technique is also much cleaner than standard injection molding in terms of atmospheric pollution because it eliminates the processes from drying to re-melting.

## Main applications for reaction injection molded products

RIMTEC has launched a series of products made from newly developed compounds with a high level of thermostability.



### Company Profile

- **Name** RIMTEC Corporation
- **Established** August 1, 2003
- **Capital** 490 million yen
- **No. of Employees** 23
- **Head office** 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005 (Shin-Marunouchi Center Building)  
TEL:03-5220-8581 FAX:03-5220-8584
- **Locations** Mizushima Plant
- **Main business** Liquid compounds for reaction injection molding (RIM) using dicyclopentadiene as the main raw material, and components formed from these compounds using RIM

## Living Together with the Local Community

- Cherry-blossom viewing with affiliate employees and their families (April)
- Cleaning the Takashima Harbor Road (June)
- ZEON Mizushima Summer Festival (August)



Clean-up campaign



Cherry-blossom viewing

## Environmental Topics

RIMTEC is working to develop new high-rigidity compounds that can be used as a substitute in products that previously used FRP (fiberglass reinforced plastic), a substance that is difficult to recycle.



## Other CSR Activities

- Passed the regular ISO9001 inspection (August)
- Passed the regular ISO14001 inspection (August)
- Exhibit at the America Show (July)
- Held molders day (November)

## Product development that puts the environment first



We strive to develop products that are friendly to the environment. We will continue to work wholeheartedly to create new products.

Yasushi Tanaka  
R&D Center Manager

Message  
Management  
Performance  
Site Reports

# ZEON Environmental Materials Co., Ltd.

ZEON Environmental Materials commenced operation in September 2004 and since then has operated as a sales company dealing with purification septic tanks and sales and installation of related products.



**Muneki Sawa**  
President

## Environmental Activities

- Despite its name, the Earth is often described as water world and currently faces major environmental problems. The proportion of the world's water that is available for use by people is only 0.01%. We are contributing to protecting and improving the world's limited water resources by marketing and installing our "PENTAM<sup>®</sup>" purification septic tanks to households.
- Purification septic tanks are an appropriate product for a society based on recycling because they work by purifying toilet and other waste water from the home and then discharging it back into the environment.
- The objective is to recycle the earth's water, maintain flows in river systems and restore the natural environment by returning the processed water to the environment.  
\* Fireflies are slowly returning to the built-up areas of Kurashiki City.

## Living Together with the Local Community

- We invited local residents to a plant visit organized by ZEON's Mizushima Plant where they were shown a cut-away model of a septic tank and we were able to promote the importance of water in the environment.
- We joined forces with ZEON's Mizushima Plant to participate in a local clean-up campaign.
- Three employees participated in the Kojima Lake Catchment Clean-up Project held each September
- We exhibited our Eco-Blower septic tank at Green Day 2008 in our role as a local company. The Eco-Blower septic tank features low power consumption and CO2 emissions as well as a function to remove nitrogen. Green Day 2008 was the third such event to be held and its main theme was "considering the forests, waters and livelihood of the Takahashi River catchment area". The event was run by an organizing committee and jointly sponsored by the Ministry of Land, Infrastructure, Transport and Tourism, Okayama Prefecture, the Prefectural Residents Office, and various towns.



Mutual 5S checks  
Neighborhood clean-up campaign

## Company Profile

● <b>Name</b>	ZEON Environmental Materials Co., Ltd.
● <b>Established</b>	September 1, 2004
● <b>Capital</b>	95 million yen
● <b>No. of Employees</b>	27
● <b>Head office</b>	2767-22 Aza Niihama, Shionasu, Kojima, Kurashiki City, Okayama Prefecture 711-0934 (Inside ZEON's No. 2 Mizushima Plant) TEL:086-470-3711 FAX:086-470-3722
● <b>Offices</b>	Fukushima, Yonezawa, Osaka, Wakayama, Kurashiki, Okayama, Shikoku, Yamaguchi, Fukuoka, Kagoshima,
● <b>Main business</b>	Purification septic tanks

- It is said that producing one ton of grain requires 2,000 tons of water.  
Our aim is to build a society where water is recycled and that enjoys a rich aquatic environment through the use of septic tanks.

## Other

- Sales staff who use vehicles for their work attended accident response training and received a certificate of attendance. You never know what sort of accidents you will encounter. Even if you are a bystander, it is good to know that you can provide assistance.
- Mutual 5S checks of sales vehicles are carried out three times a year.
- Working together with the septic tank production department with the motto that "without 5S, we cannot be sure of safety!", our aim is to be the best in Japan at everything from septic tank assembly through to sales and installation.

## 5S is the basis of everything we do!

Working together with the septic tank production department with the motto that "without 5S, we cannot be sure of safety!", our aim is to be the best in Japan at everything from septic tank assembly through to sales and installation.

**Norikazu Tsuboi**  
Administration Manager



# Tokyo Zairyo Co., Ltd.

Tokyo Zairyo Co., Ltd. with a corporate philosophy of "contributing to society as a specialist trading business founded on chemicals that supplies unique functions and services".



**Hideki Seki**  
President and CEO

## Environmental Protection

Tokyo Zairyo received ISO14001 certification on December 1 2006 and during 2007 combined its environmental management system with its quality management system (ISO9001 certification was received on October 1 2004). As a result of having established the pioneering and marketing of environmentally conscious products as an important environmental objective in its integrated management system and of having rolled out a total of 18 sales themes across its commercial departments, the company increased the proportion of environmentally conscious products in the 2007 financial year to 7.8%, up from 6.3% in the previous year.

## Encouraging Compliance with Regulations

As a trading company that deals in chemicals, Tokyo Zairyo has a responsibility to comply with internal and external rules relating to chemical substances, and our environmental and technical section in particular is working to strengthen our compliance systems. Activities in 2007 included the following.

- (1) A consultation procedure for regulatory matters was established to ensure exception-free compliance with regulations. Any employee may submit an enquiry and obtain advice from the environmental and technical section. The system is set up so that all steps from submitting the enquiry through to the results of the actions taken by the employee are recorded in a database and put to use. After the system entered service in April 2007, a total of 142 enquiries were processed in the period up to March 2008. Of these, more than 60% related to new export business. The environmental and technical section checked the internal and external rules relevant to each enquiry and advised on whether the transaction could go ahead and what procedures needed to be followed.
- (2) To establish a self-managed security export control program, we put in place procedures for checking export trade control rules in accordance with guidance from the Ministry of Economy, Trade and Industry. This procedure links in with the regulatory enquiry scheme and automatically stores an export trade review form that records the result of double-checking by the person responsible for the transaction and the environmental and technical section.

## Company Profile

● <b>Name</b>	Tokyo Zairyo Co., Ltd.
● <b>Established</b>	December 1947
● <b>Capital</b>	227.6 million yen
● <b>No. of Employees</b>	142
● <b>Head Office</b>	1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005 (Shin Marunouchi Center Building) TEL:03-5219-2171 FAX:03-5219-2201
● <b>Branches and offices</b>	Nagoya Branch, Osaka Branch, Okayama Office
● <b>Representative Office</b>	Vietnam Representative Office
● <b>Subsidiaries</b>	Tokyo Zairyo (U.S.A.) Inc. Tokyo Zairyo (Shanghai) Co., Ltd. and 3 other offices in China Tokyo Zairyo (Thailand) Co., Ltd. and 3 other offices in South East Asia
● <b>Main business</b>	Chemicals trading

- (3) Ongoing employee training is conducted. Training in 2007 covered MSDSs, export trade control regulations, and REACH (new EU rules on chemicals).



MSDS training session

## Gaining the trust of customers

The Environmental and Technical Section has the important responsibility of supporting the commercial staff and providing consultation on regulations and customers' green procurement requirements. My hope is that customers will be satisfied with our products and be able to use them with confidence.



**Minoru Ishiguro**  
Manager, Environmental and Technical Section

# ZEON Medical Co., Ltd.

ZEON Medical Co., Ltd. was established to take over the medical business of ZEON in 1989 and in the following year completed a production plant at Takaoka City in Toyama Prefecture. Since then, the company has supported medical facilities in Japan as a domestic manufacturer, primarily of products for the circulatory and digestive systems. The company combines development, manufacturing and sales to ensure it can deliver safe and high-quality products that can be used with confidence by the doctors, technicians and nurses who provide medical care to preserve the health of their patients.



Takaoka Plant and R&D Center

**Kei Ito**  
President

## Environmental Protection

### Reducing the burden on the environment

Energy conservation trend charts are used to track monthly electricity usage at the plant as part of efforts to save energy. The volume (by weight) of waste from the plant is also tracked by month to reduce the amount produced.

### NPS activities

The company belongs to the NPS (New Product System) association derived from Toyota production methods and became a full member in November of last year. Instruction meetings are held in the plant each month to improve production practices based on the principle of "improving the efficiency of operation" by "eliminating all waste".

The three basic principles of improvement through NPS are: (1) Define standards (ways of distinguishing between what is right and wrong), (2) Organize the flow (coordinate timings), and (3) Establish standard procedures (standardize work practices). The aim of these principles is to reach the "desired outcome". The NPS concept is to make improvements by making problems visible and applying the PDCA cycle relentlessly to all processes as part of day-to-day work through rigorous adherence to these

## Company Profile

- **Name** ZEON Medical Co., Ltd.
- **Established** May 1, 1989
- **Capital** 452 million yen (as of end March 2008)
- **No. of Employees** 110
- **Head office** 2-4-1 Shiba Koen, Minato-ku, Tokyo 105-0011 (7th Floor, Shiba Park Building B)  
TEL:03-3578-7727 FAX:03-3578-7751
- **Locations** Takaoka Plant
- **Main business** Catheters

principles in a way that also leads to personal growth. Thanks to the adoption of these measures, the company received a commendation award from within the ZEON group last year and is working hard on further improvement activities.

### Corporate Governance

As part of an program amongst all companies in the ZEON group to implement internal controls, ZEON Medical has formalized its rules covering basic business activities and similar.



NPS instruction meeting (1)



NPS instruction meeting (2)



NPS instruction meeting (3)

## Working together and supporting each other!



ZEON Medical contributes to society by supplying medical devices. Nothing makes me more happy than to think that, by helping other staff who work in the manufacturing and commercial parts of the business, I too am helping contribute to society.

**Akemi Egashira**  
Human Resources and  
Administration Group  
Business Planning Department

# ZEON Yamaguchi Co., Ltd.

ZEON Yamaguchi was established in October 1992 as a regional enterprise with two divisions that handled construction and analytical work respectively. In March 2008, the logistics and shipping business based at the Tokuyama Plant site was merged with our logistics department to create the new ZEON Yamaguchi. The company will continue to contribute to society as a member of the ZEON group based on these three business divisions.



Head office

**Kiyoshi Hashimoto**  
President

## Environmental Activities

### Wide range of environmental support activities for customers

ZEON Yamaguchi's analytic business supports the environmental activities of ZEON's Tokuyama Plant by analyzing the waste water and waste gas from the boiler and other parts of the plant, and by performing soil analysis for on-site building work. Externally, the company supports the environmental activities of government and local businesses and helps them reduce environmental impacts. This includes being commissioned by national or local government to undertake environmental monitoring of building work, including noise and vibration testing and testing the water quality of lakes, wetlands and the ocean. The company also performs analysis and measurement of air, odors, water, soil, noise, vibration and other environmental factors for the business activities of local companies.



Survey of sea water quality

### Activities aimed at recycling

ZEON Yamaguchi's building division sorts reusable materials such as asphalt, timber and concrete shells so that they can be recovered by designated operators. Similarly, the analytic division returns empty reagent bottles that were previously treated as waste to their manufacturers for recycling.

### CO<sub>2</sub> reduction activities

The logistics division is investigating changing all of the lifter cars used on site from diesel to battery power. The company is also investigating reducing the frequency of freight movements by utilizing its factory warehouse operations and by shortening the distance of track freight movements to adjacent warehouses as a way of reducing CO<sub>2</sub> emissions.



## Contributing even more to society

We carry out activities to earn our customers trust through our technical strengths with the aim of improving customer satisfaction in terms of quality, delivery and cost.

**Akio Oda**  
Administration Manager

## Company Profile

- **Name** ZEON Yamaguchi Co., Ltd.
- **Established** October 1, 1992
- **Capital** 50 million yen
- **No. of Employees** 88
- **Head office** 2-1 Nachi, Shunan City, Yamaguchi Prefecture 745-0023  
(Inside the ZEON Tokuyama Plant site)  
TEL0834-21-8482 FAX0834-21-8663
- **Locations** Hagi City, Yamaguchi City,
- **Main business** Construction, Analysis, Logistics,

## Living Together with the Local Community

### Activities to support the local environment

Together with the ZEON Tokuyama Plant, employees volunteered to be part of the clean-up campaign for the Higashi-gawa river that runs near the plant. Another activity that took advantage of the company's analytic capabilities to support the local environment was to subsidize the cost of testing household drinking water taken from wells in eastern Yamaguchi Prefecture. This program covers more than 1,500 tests annually and we believe it has earned the trust of the local community.



Handing over of drinking water samples

### Participation in the Fourth Shunan City Relay Race

We participated in the general high school students section of a race run on November 23 starting and finishing at the Shunan City athletics stadium. Although coming in 32nd out of 34 teams was not a great result, the sash was passed successfully from runner to runner and everyone enjoyed themselves very much at the after match function.



Pass the sash!



The end at last!

# ZEON North Co., Ltd.

ZEON North was established as a subsidiary of ZEON in April 1972. In July 2003, it merged with Daisan Kosan, an affiliated company, and the ZEON Takaoka Analysis Center, a ZEON subsidiary, to extend its operations to cover product sales, engineering, machinery sales to the aluminum industry, and environmental analysis businesses. The company runs a distinctive business that utilizes the technologies and personal connections built up over time, along with the advantages of its Hokuriku (northern) location.



Machinery and can production site of No. 1 Engineering Department

Hideki Yamanaka President

## Environmental Topics

- (1) The company designs, manufactures, and markets aluminum melting furnace and molten metal supply equipment that uses an environmentally conscious energy-saving burner system.
  - (1) Approximately 90% waste heat recovery is achieved using a low NOx regeneration burner.
  - (2) The combustion air absorbs heat from the waste gas and is preheated in a thermal accumulator prior to being supplied to the burner.
  - (3) Energy is saved by supplying the aluminum to the user already melted in a ladle.
  - (4) The siphon-based molten aluminum supply system reduces CO<sub>2</sub> emissions and delivers reliable quality and safe operation.
- (2) Acting as a certified environmental measurement agency under the weights and measures law, the company performs survey and analysis work on

### Company Profile

- **Name** ZEON North Co., Ltd.
- **Established** April 12, 1972
- **Capital** 100 million yen
- **No. of Employees** 160
- **Head office** 351 Ejiri, Takaoka, Toyama Prefecture 933-0062  
TEL:0766-25-1111 FAX:0766-25-1114
- **Main business** Plant and equipment, construction equipment, design of industrial and environmental machinery, industrial materials, materials (synthetic resins, etc.), sales of civil engineering materials and petroleum, environmental measurement certification, work environment measurement, and various types of measurement, analysis and survey work.

local environmental problems (effect of toxic substances and other contaminants).

## Molten aluminum supply Single-melt operation (Saves energy and reduces CO<sub>2</sub> emissions)



## Living Together with the Local Community

- We participated in a local beatification program along with ZEON's Takaoka Plant.
- We participate every year in a fire fighting drill organized by the Takaoka fire department.



## Emergency Response Exercises

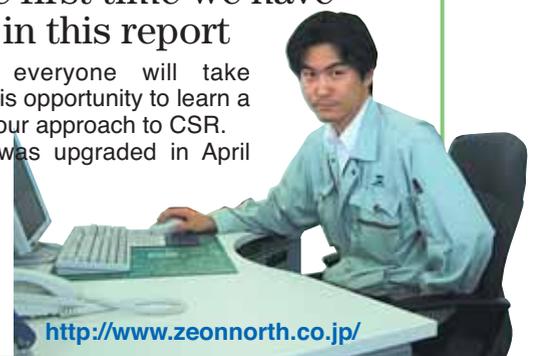
- Possible emergencies or accidents that have the potential to harm the environment are identified and an annual emergency response exercise is held.



## This is the first time we have appeared in this report

I hope that everyone will take advantage of this opportunity to learn a bit more about our approach to CSR. Our web site was upgraded in April 2008. Please take a look.

**Akihiro Fujita**  
CSR, Safety, and Administration Department



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

# Environmental Data

\* Total amount of discharges to air, water and soil  
\*\* Amount of carbon equivalent

ZEON Kasei Co., Ltd. Ibaraki Plant		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	5	3	3	2	3
	Consumption (Tons)	237	179	114	88	100
	Amount of emitted (Tons)*	30	16	13	7	6
Industrial waste	Amount produced (Tons)	410	387	426	1,057	611
	Amount sent to landfill (Tons)	322	61	62	190	198
CO <sub>2</sub> emissions (tons-C)**		1,116	725	935	931	910
Energy consumption (crude oil equivalent, kl)		2,470	2,015	2,382	2,334	1,866

ZEON Logistical Materials Co., Ltd.		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	1	1	1	1	1
	Consumption (Tons)	1.4	2.2	1.1	0.6	0.9
	Amount of emitted (Tons)*	0.7	1.1	0.6	0.3	0.5
Industrial waste	Amount produced (Tons)	54	16	6	77	76
	Amount sent to landfill (Tons)	53	12	0	0	0
CO <sub>2</sub> emissions (tons-C)**		33	44	52	47	51
Energy consumption (crude oil equivalent, kl)		70.97	95.39	109.0	102.033	110.302

ZEON Polymix Co., Ltd. Otsu Plant		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	7	6	6	6	6
	Consumption (Tons)	262	214	161	164	171
	Amount of emitted (Tons)*	0	0	0	0	0
Industrial waste	Amount produced (Tons)	190	139	144	186	216
	Amount sent to landfill (Tons)	182	111	118	120	121
CO <sub>2</sub> emissions (tons-C)**		723	723	706	682	704
Energy consumption (crude oil equivalent, kl)		1,602	1,618	1,604	1,579	1,634

ZEON Medical Co., Ltd.		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	1	1	1	1	1
	Consumption (Tons)	0.9	1.1	0.8	1.1	1.0
	Amount of emitted (Tons)*	0.8	1.0	0.8	1.1	1.0
Industrial waste	Amount produced (Tons)	8	7	8	7	2
	Amount sent to landfill (Tons)	8	7	7	7	2
CO <sub>2</sub> emissions (tons-C)**		250	232	204	198	212
Energy consumption (crude oil equivalent, kl)		508	471	407	386	423

ZEON Polymix Co., Ltd. Kawagoe Plant		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	6	5	6	6	6
	Consumption (Tons)	129	74	50	53	62
	Amount of emitted (Tons)*	0	0	0	0	0
Industrial waste	Amount produced (Tons)	102	102	121	129	150
	Amount sent to landfill (Tons)	0	62	70	84	93
CO <sub>2</sub> emissions (tons-C)**		320	242	236	247	271
Energy consumption (crude oil equivalent, kl)		743	536	534	567	571

RIMTEC Corporation		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances		0	0	0	0
	Consumption (Tons)		0	0	0	0
	Amount of emitted (Tons)*		0	0	0	0
Industrial waste	Amount produced (Tons)		132	282	108	263
	Amount sent to landfill (Tons)		1	62	0	150
CO <sub>2</sub> emissions (tons-C)**			182	330	212	160
Energy consumption (crude oil equivalent, kl)			407	598	486	366

Optes Inc. Sano Headquarters Plant		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	1	1	1	1	0
	Consumption (Tons)	0	0	0	0	0
	Amount of emitted (Tons)*	0	0	0	0	0
Industrial waste	Amount produced (Tons)	178	112	52	39	25
	Amount sent to landfill (Tons)	25	28	25	16	10
CO <sub>2</sub> emissions (tons-C)**		660	580	570	570	414
Energy consumption (crude oil equivalent, kl)		1,522	1,352	1,314	1,315	1,020

ZEON North Co., Ltd.		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances		0	0	0	0
	Consumption (Tons)		0	0	0	0
	Amount of emitted (Tons)*		0	0	0	0
Industrial waste	Amount produced (Tons)		67	28	40	45
	Amount sent to landfill (Tons)		63	27	39	45
CO <sub>2</sub> emissions (tons-C)**			140	146	138	137
Energy consumption (crude oil equivalent, kl)			81	85	81	80

ZEON Chemicals Yonezawa Co., Ltd.		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	0	0	0	0	0
	Consumption (Tons)	0	0	0	0	0
	Amount of emitted (Tons)*	0	0	0	0	0
Industrial waste	Amount produced (Tons)	533	997	1,981	824	830
	Amount sent to landfill (Tons)	259	0	0	0	0
CO <sub>2</sub> emissions (tons-C)**		440	779	1,117	1,668	2,102
Energy consumption (crude oil equivalent, kl)		1,613	2,856	4,095	6,118	7,708

ZEON Yamaguchi Co., Ltd.		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	40	40	40	40	40
	Consumption (Tons)	0	0	0	0	0
	Amount of emitted (Tons)*	0	0	0	0	0
Industrial waste	Amount produced (Tons)	110	364	97	141	62
	Amount sent to landfill (Tons)	0	33	8	7	5
CO <sub>2</sub> emissions (tons-C)**		2	2	2	2	2
Energy consumption (crude oil equivalent, kl)		5	5	5	5	5

ZEON Logistical Materials Co., Ltd.		2003	2004	2005	2006	2007
PRTR applicable substances	Number of substances	4	4	4	4	4
	Consumption (Tons)	20	25	24	22	18
	Amount of emitted (Tons)*	0	0	0	0	0
Industrial waste	Amount produced (Tons)	207	258	259	271	194
	Amount sent to landfill (Tons)	4	8	7	5	9
CO <sub>2</sub> emissions (tons-C)**		210	273	303	387	355
Energy consumption (crude oil equivalent, kl)		366	479	530	674	623

Message

Management

Performance

Site Reports



# Overseas Affiliate Activities

As ZEON's business has become increasingly globalized, we have established rubber and resin manufacturing, sales, and research bases in our main overseas markets. These overseas affiliates undertake CSR activities in the same way as the plants in Japan.

## Zeon Chemicals L.P. (USA)



### Company Profile

- **Name** ZEON Chemicals L.P.
- **Established** October 12, 1989
- **Capital** US\$ 36,000,000
- **Investment Ratio** 100% ZEON Corporation
- **Head office** 4100 Bells Lane, Louisville, Kentucky 40211, U.S.A.  
TEL:+1-502-775-7700 FAX:+1-502-775-7714
- **Main business** Synthetic rubber

## Zeon Chemicals Europe Ltd. (United Kingdom)



### Company Profile

- **Name** Zeon Chemicals Europe Ltd.
- **Established** February 6, 1989
- **Capital** STG£ 23,300,000
- **Investment Ratio** 100% ZEON Corporation
- **Head office** Sully, Vale of Glamorgan, CF64 5ZE, United Kingdom  
TEL:+44-1446-725400 FAX:+44-1446-747988
- **Main business** Synthetic rubber

### Environmental Activities

Following a thorough investigation to determine the best way to meet new regulations restricting atmospheric pollution, the Kentucky Plant has completed installation of butadiene combustion and oxidation equipment and acrylonitrile recovery equipment. Trial operation of the new systems has confirmed an improvement in atmospheric pollution. Optimization of latex (an emulsion used in the production of synthetic rubber) deodorizing equipment and investment in further combustion and oxidation equipment is planned for 2008. Our target for the future is to reduce emissions by 90%.



Spray dryer unit

### Living Together with the Local Community

Although a large number of single-parent families live in the vicinity of the Kentucky Plant, the area has few recreational facilities. To help improve this situation, ZEON Chemicals along with other neighboring chemical companies jointly promised to contribute funds to a Salvation Army community center. For its part, ZEON Chemicals will contribute \$50,000 over five years.

### Environmental and Safety Activities

#### Environmental topics

Reducing waste material has been identified as an issue. As most waste has a water content exceeding 75%, a microwave dryer was installed experimentally and succeeded in reducing the waste volume by more than 70%.

#### Safety topics

The previous paper-based system for authorizing engineering work at the plant was replaced with an electronic system. This allows across-the-board risk assessments to be made and makes it possible to perform a number of different intricate jobs in a safe manner.

New disaster prevention drills were introduced. The progress of the drill is recorded on camera and analyzed afterwards by the participants.

#### Resource and energy saving

We are continuing to reduce CO2 emissions and our target for energy consumption up to 2009 is a 25% reduction. To achieve this goal, we are planning productivity improvements along with recycling of steam drains and other heat recovery measures.



Disaster prevention drill



Martin Davis

## Zeon Chemicals Thailand Co., Ltd. (Thailand)



### Company Profile

- **Name** Zeon Chemicals Thailand Co., Ltd.
- **Established** May 9, 1996
- **Capital** BHT 350,000,000
- **Investment Ratio** 73.9% ZEON Corporation
- **Head office** 3 Tambol Huaypong, Soi G-14  
Pakorn-Songkhororat Road,  
Amphur Muang, Rayong 21150, Thailand  
TEL:+66-3-868-5973~5 FAX:+66-3-868-5972
- **Main business** Petroleum resin

### Environment and Safety Activities, and Related Topics

#### Environment and safety activities

New occupational health and safety and environmental management systems were established in November 2007 and work is underway to achieve simultaneous accreditation under both OHSAS18001 and ISO14001 by the third quarter of 2008.

Examples of the extra emphasis on day-to-day activities in these areas include educational initiatives such as regular safety training, and the publishing of a weekly health and safety report and a safety and environment newsletter for all employees.

#### Compliance

Emergency management and compliance committees were established in January 2008 to consolidate and extend the associated management systems and strengthen the organization.



Fire fighting drill

### We want to bring the world together

We produce Quintone petroleum resin for use in adhesives and are the ZEON group's only petrochemical production plant in South East Asia.

**Makoto Takamura**



## Zeon Advanced Polymix Co., Ltd. (Thailand)



### Company Profile

- **Name** Zeon Advanced Polymix Co., Ltd.
- **Established** April 26, 1995
- **Capital** BHT 100,000,000
- **Investment Ratio** 40% ZEON Corporation
- **Head office** 111/2 SOI NIKOM 13, MOO 2  
T.Makhamkhoo, Nikompattana Sub-District,  
Rayong 21180, Thailand  
TEL:+66-2-261-0175 FAX:+66-2-261-0172
- **Main business** Carbon master batch rubber

### Living Together with the Local Community

#### Opening ceremony for new plant

A new plant was constructed in 2007 to keep pace with the strong growth in the automotive industry in Thailand.

An opening ceremony was held for the new plant with invited guests including the local police, government officials, Thailand investors association, neighboring companies, and local residents.

#### Activities with the Local Community

We donated stationery and other materials to a neighboring elementary school to help us become a part of the local community. We also donated 60,200 Baht to temples and schools.



Opening ceremony for new plant



Presentation of donated stationery



As part of the global rubber industry, we help supply master batch to the Asian region.

**Takahiro Okada**

# Third-party Verification



## CSR Report 2008 Third-party Verification : Statement

Responsible Care  
ZEON Corporation  
Naozumi Furukawa, President and CEO

September 3, 2008

Akio Yamamoto  
Chairman, Verification Advisory Committee  
Japan Responsible Care Council  
Saburo Nakata  
Chief Director, Responsible Care Verification Center

### ■ Purpose of Verification

The purpose of this Responsible Care report verification is for the Responsible Care Verification Center to publish an assessment by specialists from the chemicals industry of ZEON Corporation's 2008 CSR Report (abbreviated below as "the report") in terms of the following criteria.

- 1) The suitability of the methods used to calculate and collate (quantitative) performance indicators and the accuracy of the figures produced
- 2) The accuracy of non-quantitative report content
- 3) The Responsible Care activities performed
- 4) Features of the report

### ■ Verification Procedure

- At head office, we evaluated the suitability of the methods used to collate the reported quantitative information from each site (offices and plants) and the accuracy of non-quantitative information. The investigation consisted of questioning the staff in charge of operations and the staff who prepared the report on the content of the report and asking them to provide us with documentary evidence and explanations.
- At the Mizushima Plant, we evaluated the suitability of the methods used to calculate the figures reported at head office, the accuracy of the figures and the accuracy of the information presented. The investigation at Mizushima Plant consisted of questioning the staff in charge of operations and the staff who prepared the report, asking them to provide us with documentary evidence and explanations, and reviewing the consistency of the information against the evidence.
- A sampling technique was used to evaluate the quantitative and other information.

### ■ Statement

- 1) Suitability of (quantitative) performance indicator calculation and collation methods and accuracy of figures produced
- Reasonable calculation and collation methods were used to produce the quantitative information at the head office and Mizushima Plant.

We also noted that, from this year, data collection from the plants has been upgraded to an automatic system that does not require manual work.

- 2) Accuracy of reported information
- We confirmed the accuracy of the information contained in the report. Although we pointed out some minor problems relating to suitability of expression and ease of understanding in the draft document, these have been corrected in the final report and we cannot find any serious issues in the current document that need to be corrected.
- 3) The Responsible Care activities performed
- We found that, lead by the President, the management have worked closely with the plants to create a safe and stable workplace, and have shown enthusiasm for introducing an equipment information management system, making progress on foolproofing, and reviewing past accidents to prevent reoccurrence.
- We found that the company has produced and is implementing a new three-year plan to encourage further energy conservation that has stated a specific target of reducing unit energy consumption to 75% of the 1990 level in 2010. We anticipate the company achieving its targets for each year.
- We found that the Mizushima Plant is working with local government and ten other companies associated with the industrial complex on resource recycling and reducing the volume of waste being sent to landfill, and is achieving significant results.
- The Mizushima Plant completed its new Integrated Production Center in November of last year where it was able to consolidate approximately half of its operational departments. In addition to completing this consolidation, we found that the plant is committed to progressing operational standardization and system development to create a safe and stable workplace.
- 4) Features of the report
- Although we found that the increased use of employee photographs and messages from employees conveyed a more friendly impression, we hope the CSR content of the report can be made more comprehensive in future.

## CSR Activity Time Line (ZEON Corporation only)

Year	Activity Details
1994	ISO9002 certification was registered for the Takaoka Plant (changed to the ISO9001:2000 version in 2002) ISO9002 certification was registered for the Tokuyama Plant (changed to the ISO9001:2000 version in 2002)
1995	Joined the Japan Responsible Care Council ZEON declared that it would perform Responsible Care activities The "ZEON Responsible Care Basic Policy" was established ISO9002 certification was registered for the Kawasaki Plant (changed to the ISO9001:2000 version in 2003) ISO9002 certification was registered for the Mizushima Plant (changed to the ISO9001:2000 version in 2003)
1996	The company-wide safety management system was reviewed and strengthened The "ZEON Safety Philosophy" was established The "Plant Technology Audit System" was established and activities started
1997	The "Company-wide Environment Improvement Project" was established The first "ZEON Safety Month" and "All-ZEON Safety Conference" were held (subsequently held every April) A code of conduct ("ZEON's 7 Articles") was established
1998	ISO14001 certification was registered for the Takaoka Plant The Kawasaki Plant acquired certification after the high-pressure gas safety inspection
1999	ISO14001 certification was registered for the Tokuyama Plant ISO14001 certification was registered for the Mizushima Plant ISO14001 certification was registered for the Kawasaki Plant ISO9001 certification was registered for the polymer departments The "Risk Management Rules" were established
2000	The Takaoka Plant acquired certification after the high-pressure gas safety inspection Started to publish the "Responsible Care Activity Report" (from the 1999 edition)
2001	The "ZEON Environment Philosophy" was established The "Handling Restricted Materials Rules" were established
2002	The "Affiliate Joint Environment and Safety Meeting" was established The "Project for Reducing the Emissions of Substances Subject to the PRTR Law" was established The "Project for Promoting the Development of Energy Conserving Technology" was established
2003	The "Energy Management Rules" were established Revision to the "Risk Management and Compliance Rules" Action Plan for "ZEON's 7 Articles" was established The "Rules for Observing Antitrust Laws" were established
2004	ISO9001 certification was registered for the Specialty Plastics Division The "Internal Report System" was established "Compliance Textbook 1" was published
2005	The English version of the "Responsible Care Activity Report" was published Third-party verification was performed for the "Responsible Care Activity Report" "Compliance Textbook II (FAQ)" was published
2006	The "Responsible Care Activity Report" was renamed the "CSR Report" The "Basic Policy Concerning the Establishment of an Internal Controls System" was established
2007	The basic policy for financial reporting was established A part time work system to promote child care was introduced

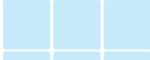
## ISO14001 Certification Status for ZEON Corporation

Site	Registration No	Registration Date	Date of Most Recent Update or Reconfirmation
Takaoka Plant	JQA-EM0265	1998.11	2007.11 (Update)
Tokuyama Plant	JQA-EM0421	1999. 5	2008.5 (Update)
Kawasaki Plant	JQA-EM0524	1999. 5	2007.9 (Reconfirmation)
Mizushima Plant	JQA-EM0520	1999. 9	2007.9 (Reconfirmation)

## ISO14001 Certification Status for Affiliates

Site	Registration No	Registration Date	Date of Most Recent Update or Reconfirmation
ZEON Kasei Co., Ltd.	Head Office and R&D Center	E04-417	2004. 7
	Ibaraki Plant	E03-360	2003.11
ZEON Polymix Co., Ltd.*	JSAE887	2004. 6	2008.1 (Reconfirmation)
Optes Inc.	Sano Head Office Plant	JQA-4517	2005. 2
	Toyama Plant	JQA-4560	2005. 2
ZEON Chemicals Yonezawa Co., Ltd.*	03319-B	2006. 6	2008.6 (Reconfirmation)
RIMTEC Corporation	JQA-EM4296	2004.10	2007.9 (Update)
Tokyo Zairyo Co., Ltd.	JQA-EM5592	2006.12	2007.10 (Reconfirmation)
ZEON North Co., Ltd.*	18713A	2007. 1	2007.12 (Reconfirmation)
ZEON Chemicals Europe Ltd. (ZCEL)	EMS 53205	1999.12	2008.5 (Reconfirmation)
ZEON Advanced Polymix Co., Ltd. (ZAP)	AJA03-6412	2003. 6	2007.1 (Reconfirmation)

\*: Combined certification with ISO9001



CSR REPORT  
2008  
CSR Report

# ZEON

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