



CSR  
REPORT  
2009

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**Editorial Policy**

DENKA set up its CSR Promotion Department in April 2007 as part of DENKA100, a Companywide initiative to meet new challenges while heading toward its centennial in 2015. The department coordinates Responsible Care (see note below) and other corporate social responsibility (CSR) activities throughout the organization. The Company started publishing an annual Environmental Report in 2000 replacing it with the CSR Report in October 2007.

This report presents our businesses and activities to demonstrate our efforts to build trust among all our stakeholders. It highlights the activities of the Environmental Burdens Reduction Promoting Department, which we established during the year under review, and a focus on disaster-prevention, safety and health initiatives.

The Japan Responsible Care Council conducted a third-party audit of the report. In preparing this publication, we referred to Reports on Environmental Guidelines 2007 by Japan's Ministry of the Environment and Version 3 of the Sustainability Reporting Guidelines by the Global Reporting Initiative.

Note: The definition of Responsible Care is: Activities undertaken by the chemical industry by which manufacturers and handlers of chemical substances, under the principle of self-determination and individual responsibility, conduct self-management of environmental and safety issues surrounding aspects of chemical substances, from development through to disposal.

**Scope of Report**

**Coverage**

This report generally covers fiscal 2008—April 1, 2008, through March 31, 2009—although it also includes numerical targets and performance statistics before, and subsequent events after, that period.

**Scope**

Unless stated otherwise, the data in this report is based on information on the business sites of DENKA and key affiliates. These sites are the Omi, Omuta, Chiba, Shibukawa, Ofuna and Isesaki plants, and the Central Research Institute. We also include data for the plants at which Electronic Materials Institute and Polymer Technology Institute are located.

The key affiliates are Denal Silane Co., Ltd., Denak Co., Ltd., JUZEN Chemical Corporation at the Omi Plant, and Chiba Styrene Monomer Limited Company, TOYO STYRENE Co., Ltd., and Taiyo Vinyl Corporation at the Chiba Plant. The financial sections on pages 36 to 39 and 52 to 54 of this report present consolidated data.

**For More Information**

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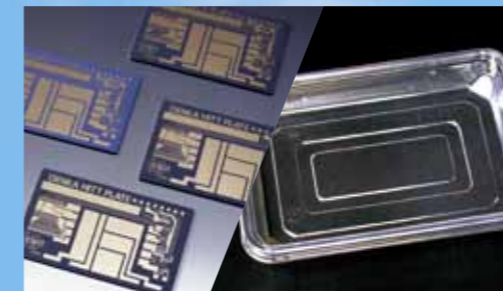
**We strove to cut emissions of carbon dioxide and other environmentally hazardous substances while focusing on worker health and safety and disaster prevention.**

**Cutting emissions of carbon dioxide and other environmentally hazardous substances**



We established the Environmental Burdens Reduction Promoting Department in October 2008. The office forms part of intensified Group efforts to cut emissions of carbon dioxide and other environmentally hazardous substances as a socially responsible chemicals producer.

**Offering Environmentally Friendly Products**



This report showcases three products in the areas of electronic materials, food packaging and construction materials that save help energy and lower carbon dioxide emissions and environmental impact.

**Focusing on Employee Safety and Health and Enhancing Disaster Preparedness**



We spotlight efforts that all our business sites are undertaking. A special feature details safety initiatives at the Omi Mine and disaster safeguards at the Chiba Plant's petrochemicals complex.

**Presenting Site Reports for Key Affiliates**



These reports cover major sites for six domestic and four overseas plants, three research centers and five key affiliates.

# Pursuing Lasting Trust as an Outstanding Manufacturer

## 1. Committed to Conserving Energy

DENKA was established in 1915 to manufacture fertilizers and other chemical products.

The original English rendering of our corporate name was Electrochemical Industries. As that name suggests, we started out by using electrical furnaces to transform limestone and coke into carbide and industrial chemical products incorporating that material.

The electric power infrastructure was poor at the time, so we built a hydropower plant to serve our needs. Conserving energy has long been a key priority for us, as the efficient consumption of precious energy has contributed significantly to the competitiveness of our offerings.

Now, our operations also encompass such fields as petrochemicals, and hydropower remains a valuable—and clean—source of energy for our business. At the same time, we have embraced natural gas-based and biomass power generation to save energy and lower emissions of carbon dioxide and other environmentally harmful substances.

## 2. Our Mission

Our mission is to manufacture products that contribute to a better society. Founder Tsuneichi Fujiyama, who pioneered the use of carbide in Japan, devoted himself to producing chemical fertilizers domestically to foster the nation's agricultural sector. His vision of serving social needs lives on in our diverse business portfolio.

Priorities today are innovate products that help conserve energy and reduce environmental footprints, a good example being our solar power offerings. We are employing life cycle assessments to help customers reduce waste and environmental impact when using our products.

## 3. CSR at DENKA

It is important for us to remain a good corporate citizen for all our stakeholders—including society, shareholders, customers, employees and the environment—to achieve sustainable growth. DENKA100, a Company-wide initiative to prepare for our centennial in 2015, comprises policies relating to corporate social responsibility and five other areas which are central to building lasting trust as an outstanding manufacturer.

The DENKA Group Guidelines underscore our CSR commitment as a chemical products manufacturer in 10 key respects, including safeguarding the environment, maintaining employee safety and health, ensuring security and preventing disasters, compliance, employment and social initiatives. We are undertaking voluntary environmental, safety and health efforts through our Responsible Care activities. We produced a medium-term environmental plan that incorporates numerical goals for saving energy and reducing emissions of chemical substances in the Pollutant Release and Transfer Register (PRTR), while also cutting final waste disposal.

We would greatly appreciate your feedback on this report on our basic CSR activity policies and achievements, and look forward to your ongoing support as we step up our endeavors.

September 2009

*Seiki Kawabata*

Seiki Kawabata  
President



# Pursuing New Challenges through DENKA100 for Our Centennial

We launched DENKA100 in April 2007 prepare for our centennial in 2015.

## 1. What is DENKA100?

This management plan aims to double operating income between fiscal 2006 and 2015 to ¥60 billion on a consolidated basis and ¥50 billion in non-consolidated terms. DENKA100 comprises the following six key policies.

## 1 Undertake DENKA Business Development DS09 and KIT09

DS09 is the first stage of DENKA100, covering fiscal 2007 through 2009. During this period, we aim to increase consolidated operating income from ¥30 billion in fiscal 2006, to ¥43 billion. On a non-consolidated basis, the goal is to boost operating income to ¥35 billion, from ¥25 billion in fiscal 2006. In fiscal 2009, we are additionally deploying KIT09, an acronym for a Japanese term, which seeks to address recessionary challenges.

## 2 Deploy GCP2.0

We launched the Good Company Program (GCP) in October 2004. We updated this initiative to GCP2.0 in April 2007 to enhance employee awareness and pursue operational reforms, and thus revitalize the Company through new thinking.

## 3 Cultivate Human Resources

We will better motivate employees by enabling them to think, learn and act independently, assisting their activities through education from the Human Resource Development Center.

## 4 Enhance Productivity

We will strengthen the technological and other capabilities of production sites by more effectively using resources and raw materials, improving equipment and facility capacities and creating value-added products.

## 5 Foster R&D

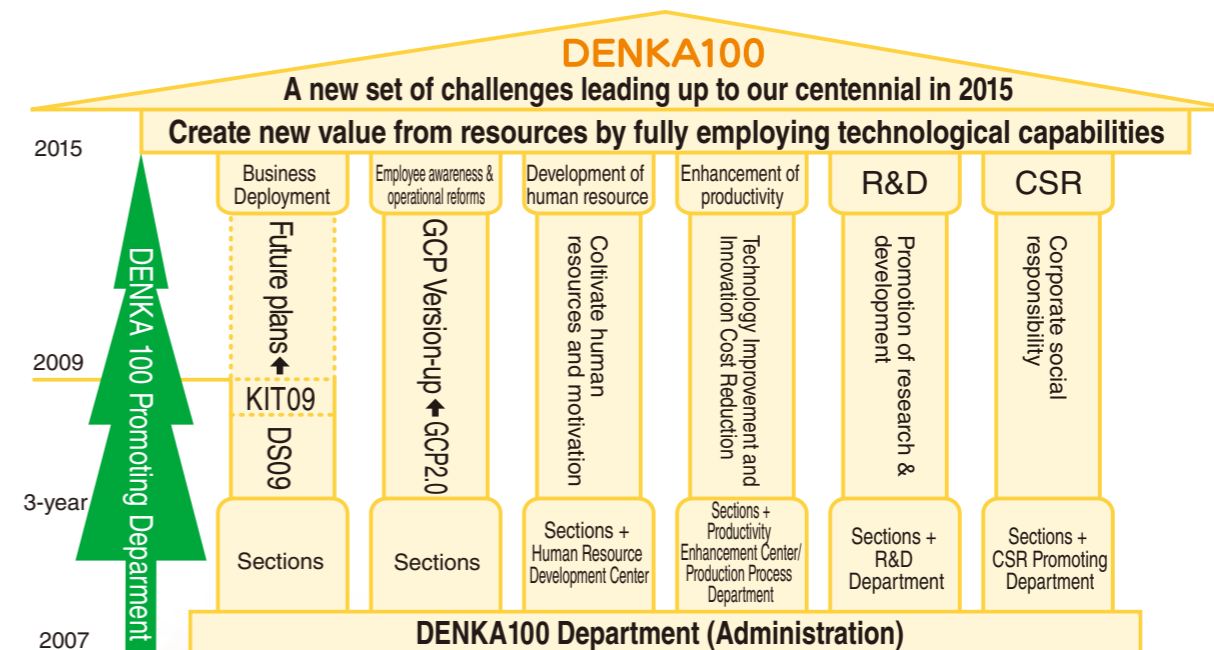
The Research and Development Department is leading efforts to strengthen existing product lines and more swiftly innovate environmentally friendly offerings.

## 6 Pursue Corporate Social Responsibility

We are endeavoring to fulfill our CSR requirements, focusing particularly on the environment, secure employment, compliance and social initiatives.

## DENKA100 Targets

Double operating income between fiscal 2006 and 2015 to ¥60 billion on a consolidated basis and ¥50 billion in non-consolidated terms



## DENKA100 Guideline

Become a trustworthy organization  
Identify new business opportunities  
Operate honorably and foster individual talent

CSR is central to our management.

1 Corporate Philosophy and Guidelines

The DENKA Group philosophy is to become a corporation that creates value from resources by fully utilizing advanced technological capabilities. The Group's 10 CSR guidelines are as follows.

1 DENKA Group Guidelines

1. We will promote sustainable social and business development out of a conviction that corporate social responsibility is the essence of business.
2. We will contribute to sound social progress by developing and supplying products and services that are safe and environmentally friendly.
3. We will operate fairly.
4. We will maintain a good level of communication with society and disclose appropriate information.
5. We will comply with laws and regulations and operate fairly according to social norms.
6. We will maintain safe, clean and comfortable workplaces and respect all basic human rights.
7. We will use, reuse and recycle resources to help protect the environment.
8. We will maintain security and disaster prevention measures, participate in environmental protection activities and communicate with society.
9. We will contribute to society as a good corporate citizen.
10. We will contribute to social development as a good member of the global community.



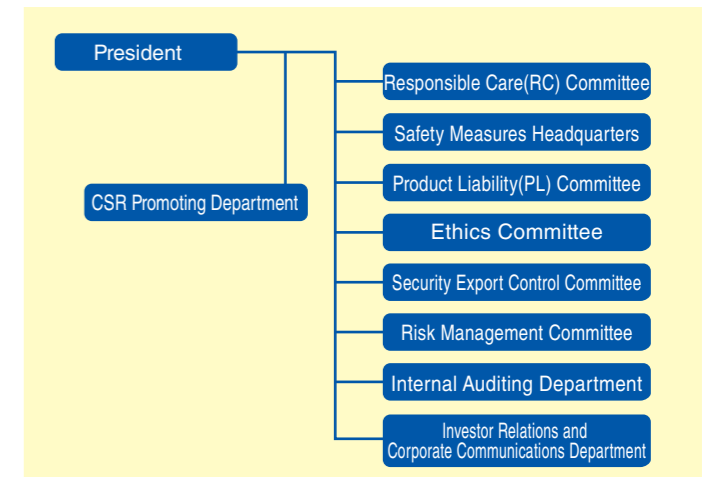
Director Senior Executive Officer In charge of CSR Promoting Department **Mamoru Hoshi**

2 CSR Promoting Department Activities

The CSR Promoting Department oversees CSR issues related to many areas of the Company. The department collaborates with the DENKA100 Promoting Department and the Investor Relations and Corporate Communications Department to promote CSR internally and externally.

1. Define basic CSR policies and comprehensive solutions for the DENKA Group
2. Educate and enlighten on Group CSR activities (collaborating with the DENKA100 Promoting Department)
3. Publicize CSR activities (Investor Relations and Corporate Communications Department)
4. Internally and externally communicate CSR achievements
5. Secretariat for other CSR activities

CSR Organization as of April 2009



1 CSR at DENKA

1 Our CSR Approach

CSR encompasses tackling Companywide environmental, safety, employment, compliance and social activities issues. Companies must be proactive and accountable in dealing with these issues.

In April 2007, we launched DENKA100 company-wide to meet new challenges heading toward our centennial in 2015.

Relationships with stakeholders are vital for us to progress sustainably. It is essential for us to operate in keeping with CSR requirements, which are pivotal to DENKA100.

We are endeavoring to fulfill our CSR obligations as a good corporate citizen for the following stakeholders.

Stakeholders	CSR issues
Customers	Develop and supply high-quality products that are economical and useful.
Society	Act as a good corporate citizen to ensure compliance and communicate better with communities.
Employees	Offer comfortable and rewarding workplaces.
The environment	Prevent global warming (reduce carbon dioxide emissions), control chemical substances emissions, reduce waste and innovate technologies that conserve energy.
Shareholders and investors	Stably improve business results and build trust by exchanging information.

1 CSR Concepts



2 CSR Milestones

1985	The Canadian Chemical Producers' Association proclaimed the Responsible Care(RC) ethos of independently controlling and managing chemical substances
1990	International Council of Chemical Association(ICCA) established
1995	Japan Responsible Care Council(JRCC) established; became a member Created the Responsible Care policy and organized our Responsible Care(RC) Committee
1997	Started Responsible Care audits Created a basic manual to promote product liability measures and organized the Product Liability(PL) Committee
1998	Organized the Energy Saving Subcommittee
1999	The Chiba Plant acquired ISO 14001 certification (all plants were certified by 2004)
2000	Published our first Environmental Report Discovered acetylene and dioxin emissions at our alumina fiber plant and filed a report with the relevant government agency (becoming a designated facility under the Dioxin Special Measures Act in 2002)
2001	Inaugurated natural gas cogeneration facilities at the Chiba Plant
2002	The Omi Mine won the Gold Kanban Award for excellence in mine preservation and performance Started presenting information on affiliates in our Environmental Report
2003	Launched biomass boiler power generation operations at the Omi Plant Created the Negative List (a database on environmental chemical substances) Integrated with TOYO KAGAKU Co., Ltd. Started our first medium-term environmental plan
2004	Inaugurated our Good Company Program(GCP)
2005	Launched our second medium-term environmental plan
2006	Conducted Japan Responsible Care Conference third-party audits at the Omuta Plant Omi Plant began accepting sewage sludge for its recycling system
2007	Commenced the Companywide DENKA100 initiative Established the CSR Promoting Office Published our first CSR Report Japan Responsible Care Council (JRCC) began providing third-party audits of our CSR Report (covering headquarters and the Chiba Plant)
2008	Japan Responsible Care Council (JRCC) provided a third-party audit of our CSR Report (headquarters and the Omi Plant) Set up the Earth Committee (see page 29)

# 3 Corporate Governance and Compliance

**We are building a highly transparent corporate structure to earn the trust of all stakeholders.**

## 1 Corporate Governance

We must meet the expectations and respect of shareholders, customers, local communities, employees, and other stakeholders. Corporate governance underpins social respect and support. We have thus taken steps to improve both the Board of Directors and our auditing system, while streamlining our management organization and bolstering our compliance system.

## 1 Corporate Governance Structure

We adopted a Corporate Auditor System as the basis of our Corporate Governance System. The Board of Auditors includes two independent members, assessing our operations and management to ensure that our business properly serves stakeholders.

The Board of Directors similarly has two external members. We ensure management transparency by separating that board's oversight from executive implementation.

The chart below shows our corporate governance structure, including the internal Audit System.

## 1 Internal Controls

Internal control systems are fundamental to meeting society's expectations and gaining its respect. We will continue to improve our systems in line with the policies of the Board of Directors. The following outlines details of the system.

### 1 Board of Directors and Executive Officers

Two of our ten directors are external. In April 2008, we reformed this body to separate oversight and implementation by eliminating ranks within the board while reinforcing its supervisory functions. The Board of Directors appoints executive officers to run operations under leadership of the president.

### 2 Internal Auditing System

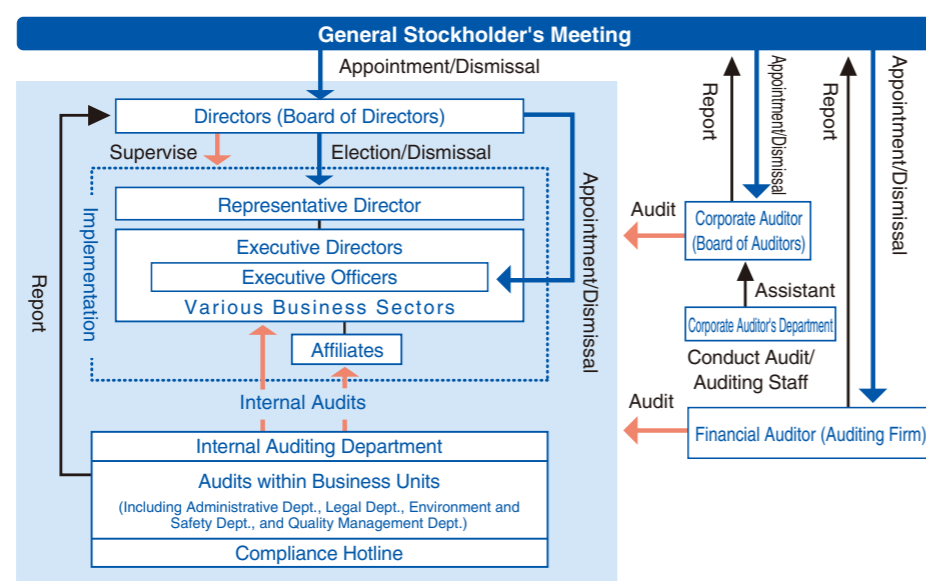
The Internal Auditing Department conducts most of our in-house checks, with assistance from the Legal, Environment and Safety, and Quality Management departments. It also works closely with our Product Liability, Responsible Care and other committees. Each department and committee collaborates to educate on legislation and audit operations. The results go to the Board of Directors.

We inaugurated the Compliance Hotline System to supplement internal audits by swiftly identifying and addressing any violations (see page 9).

### 3 Internal Controls Reporting System

This system under Japan's Financial Services and Exchange Act aims to ensure that financial statements are reliable.

## Corporate Governance Overview



We conduct Group wide checks of business to reduce possible mistakes and risks in keeping with the implementation standards of this system, swiftly addressing any problems.

We issued our first internal controls report following the system's implementation in fiscal 2008. This document declared the effectiveness of our internal controls based on an evaluation for that year in line with assessment standards for generally accepted financial reports.

An independent accounting firm (ERNST & YOUNG SHINNIHON LLC) audited our report and determined that all significant aspects of our disclosure were proper.

## 1 Compliance

Compliance is essential for sustainable growth. We accordingly adhere to internal rules and legislation and refrain from acts that violate moral and ethical norms. In 2002, we codified conduct standards in the DENKA Group Ethics Policy.

We established the Ethics Committee, which the president chairs, to oversee compliance and enforce the policy. We adopted compliance policies for the Legal, Environmental and Safety, Intellectual Property and other departments.

We educate employees on compliance through programs run by the Human Resources Development Center.

## 1 Compliance Hotline System

This system covers any shortfalls in our internal control and compliance systems by enabling us to fix organizational problems that may arise. We set up the Compliance Hotline in keeping with the DENKA Group Ethics Policy.

The hotline accepts calls on actions that may or do violate that policy. The Ethics Committee quickly addresses reports.

The hotline's mandate is to be fair and swift. It receives reports from the Corporate Auditors' Office and labor union, which operate independently, as well as from the Ethics Committee Administrative Office and general affairs sections within all offices. People can send reports to an external law firm. They can also e-mail reports to internal auditors.

The DENKA Group Ethics Policy specifically safeguards whistleblowers from discrimination and mistreatment.

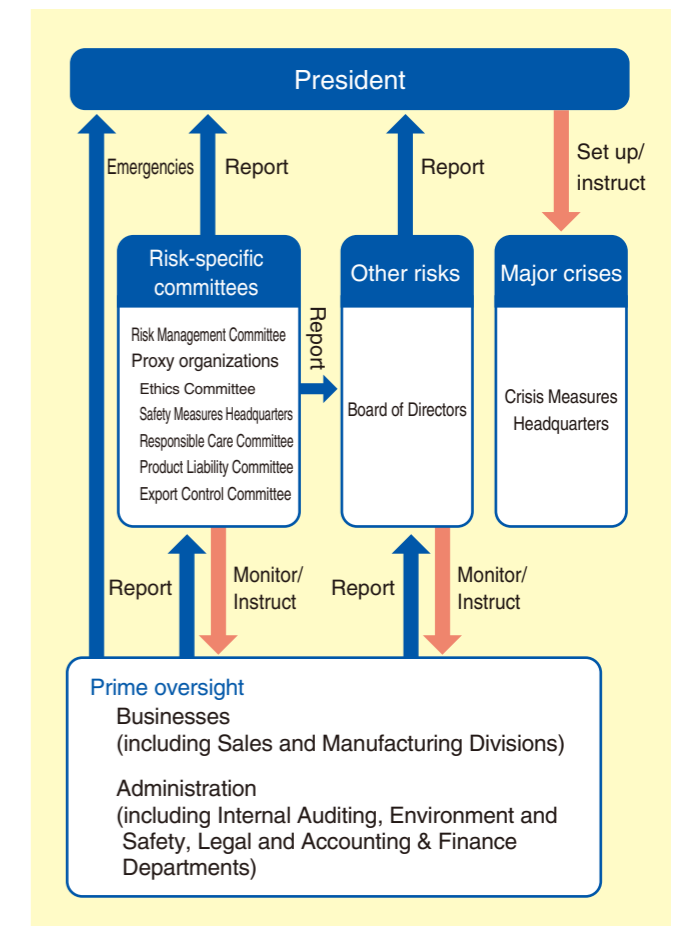
## 1 Risk Management

It is important to understand the diverse and numerous hazards of corporate activities through proper risk control.

In general, each business unit is responsible for identifying and managing its specific risks. We maintain special sections and permanent committees to handle environmental, safety, product liability and export control issues that affect the entire Company.

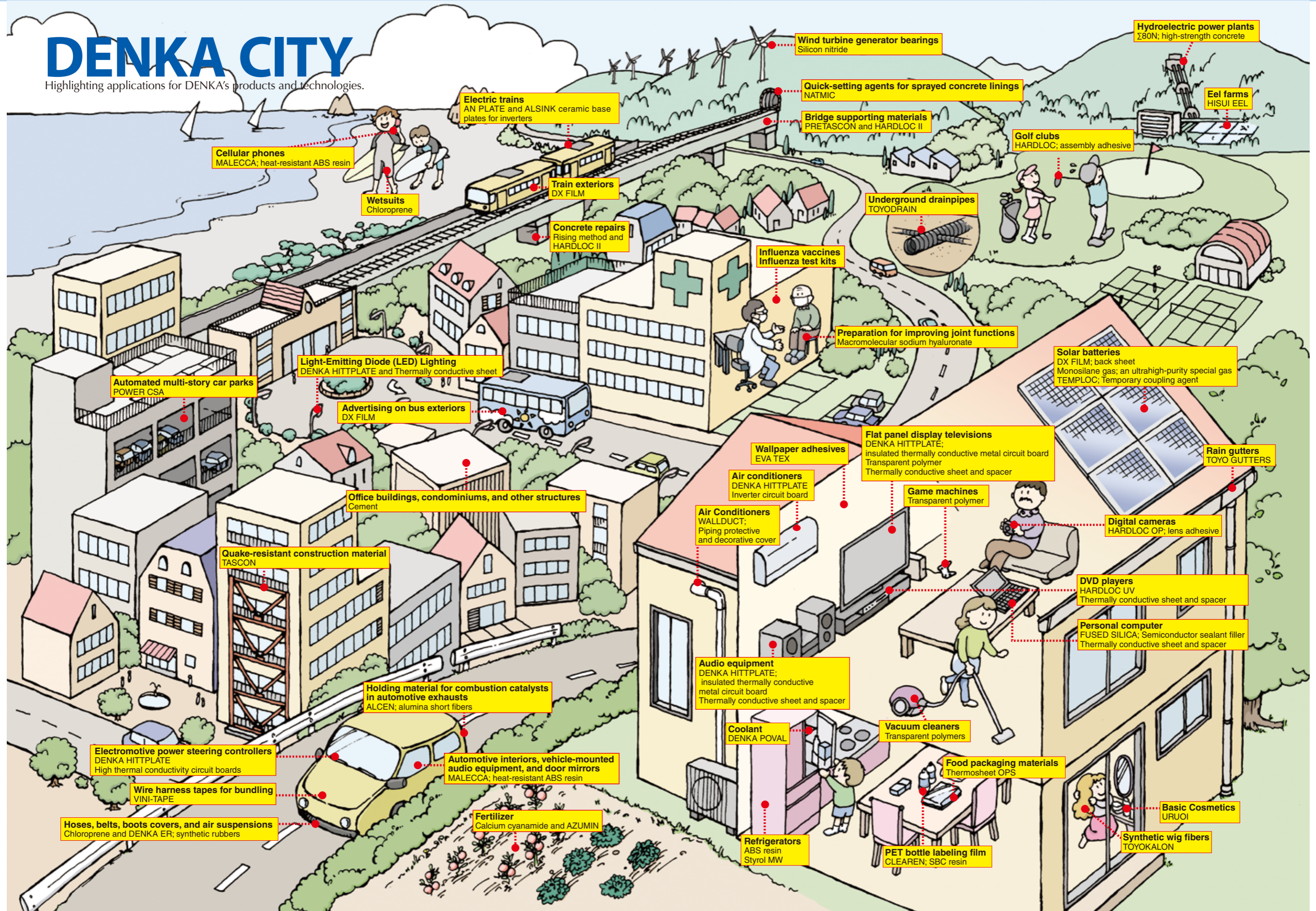
We formulated our Risk Management Guidelines to comprehensively tackle incidents that greatly affect corporate activities. We also set up the Crisis Measures Headquarters and the permanent Risk Management Committee.

## Risk Management Overview



# DENKA CITY

Highlighting applications for DENKA's products and technologies.



**Cellular phones**  
MALECCA; heat-resistant ABS resin

**Wetsuits**  
Chloroprene

**Electric trains**  
AN PLATE and ALSINK ceramic base plates for inverters

**Train exteriors**  
DX FILM

**Concrete repairs**  
Rising method and HARDLOC II

**Wind turbine generator bearings**  
Silicon nitride

**Quick-setting agents for sprayed concrete linings**  
NATMIC

**Bridge supporting materials**  
PRETASCON and HARDLOC II

**Hydroelectric power plants**  
S80N; high-strength concrete

**Eel farms**  
HISUI EEL

**Golf clubs**  
HARDLOC; assembly adhesive

**Underground drainpipes**  
TOYODRAIN

**Influenza vaccines**  
Influenza test kits

**Preparation for improving joint functions**  
Macromolecular sodium hyaluronate

**Light-Emitting Diode (LED) Lighting**  
DENKA HITPLATE and Thermally conductive sheet

**Automated multi-story car parks**  
POWER CSA

**Advertising on bus exteriors**  
DX FILM

**Solar batteries**  
DX FILM; back sheet  
Monosilane gas; an ultrahigh-purity special gas  
TEMPLOC; Temporary coupling agent

**Rain gutters**  
TOYO GUTTERS

**Office buildings, condominiums, and other structures**  
Cement

**Wallpaper adhesives**  
EVA TEX

**Air conditioners**  
DENKA HITPLATE  
Inverter circuit board

**Flat panel display televisions**  
DENKA HITPLATE;  
insulated thermally conductive metal circuit board  
Transparent polymer  
Thermally conductive sheet and spacer

**Game machines**  
Transparent polymer

**Digital cameras**  
HARDLOC OP; lens adhesive

**Quake-resistant construction material**  
TASCON

**Air Conditioners**  
WALLDUCT;  
Piping protective  
and decorative cover

**DVD players**  
HARDLOC UV  
Thermally conductive sheet and spacer

**Holding material for combustion catalysts in automotive exhausts**  
ALCEN; alumina short fibers

**Audio equipment**  
DENKA HITPLATE;  
insulated thermally conductive  
metal circuit board  
Thermally conductive sheet and spacer

**Personal computer**  
FUSED SILICA; Semiconductor sealant filler  
Thermally conductive sheet and spacer

**Electromotive power steering controllers**  
DENKA HITPLATE  
High thermal conductivity circuit boards

**Automotive interiors, vehicle-mounted audio equipment, and door mirrors**  
MALECCA; heat-resistant ABS resin

**Coolant**  
DENKA POVAL

**Vacuum cleaners**  
Transparent polymers

**Food packaging materials**  
Thermosheet OPS

**Wire harness tapes for bundling**  
VINI-TAPE

**Hoses, belts, boots covers, and air suspensions**  
Chloroprene and DENKA ER; synthetic rubbers

**Fertilizer**  
Calcium cyanamide and AZUMIN

**Refrigerators**  
ABS resin  
Styrol MW

**PET bottle labeling film**  
CLEAREN; SBC resin

**Basic Cosmetics**  
URUOI

**Synthetic wig fibers**  
TOYOKALON

# Serving Society

1

## Environmentally Friendly Products

This report highlights three of the fruits of our efforts to develop environmentally friendly products.

### SOFLIGHT Superlight Food Packaging (DENKA Polymer Co., Ltd.)



For salads, side dishes and salted dried seafoods, and other fare

Wholly owned DENKA Polymer Co., Ltd., specializes in the production and sales of polystyrene food packaging, focusing on producing light foam PSP food trays, biaxially oriented polystyrene (OPS) trays and food packaging. Its efforts have led to the development of SOFLIGHT, a next-generation superlight food-packaging product that is both rigid yet supple.

Over the years, this subsidiary has deployed measures to combat global warming from carbon dioxide emissions, conserve resources and cut waste. As part of those measures it has prioritized the creation of lighter food packaging. This section spotlights SOFLIGHT, one such offering.

#### People-Friendly Food Packaging

SOFLIGHT is a new food styrene packaging product that combines the rigidity of OPS and the flexibility of polyethylene terephthalate (PET). It is an ideal alternative to amorphous PET packaging.

SOFLIGHT's uses include containers for side dishes, salted and dried food, and other containers, and salad packages.

One drawback to the rigidity of OPS is that it cracks easily. However, SOFLIGHT eliminates this problem without compromising rigidity, making it perfect for users.

#### Environmentally Friendly Food Containers

Our life cycle estimate (see note 1 below) is that carbon dioxide emissions from disposal of SOFLIGHT packaging is around 4% lower per unit of weight than that from PET containers. Another benefit is that SOFLIGHT packaging is lighter because of its reduced specific weight (see note 2 below). SOFLIGHT containers impose less environmental impact, as they would emit about 24% less carbon dioxide than PET counterparts with the same thickness.

Note:

1. Based on life cycle assessment data of 5.4 kilograms of carbon dioxide per kilogram for SOFLIGHT packaging and 5.6 kilograms of carbon dioxide per kilogram for A-PET packaging.
2. The specific weights are 1.05 for SOFLIGHT and 1.33 for PET.

#### Cutting Carbon Dioxide Emissions and Waste

Reducing household waste is essential to lowering Japan's carbon dioxide emissions and environmental impact. The Revised Containers and Packaging Recycling Law requires businesses to pay part of the recycling costs. Our mission as a food packaging manufacturer will thus be to further lighten containers and reduce materials waste.

#### Salesperson Comment

Our superlight packaging has gained considerable social attention, and has even featured in news programs. We aim to bolster our profile and capture new business opportunities by highlighting the importance of lighter packaging.



**Takemasa Kosugi**  
Kanto No. 2 Sales Department  
DENKA Polymer Co., Ltd.

## DENKA HITPLATE Insulated Thermally Conductive Metal Circuit Board

### DENKA HITPLATE

This product is used in electrical equipment. It features a thermally conductive aluminum substrate coated with a layer of insulating epoxy resin incorporating a highly conductive ceramic filler, on top of which a copper electronic circuit is formed.

Power transistors, LED devices and other heat-emitting electronic components are mounted on the circuit.

High performance, integration and power requirements make it essential to develop technologies to disperse the heat from electronic components in automobiles, air-conditioners, lighting and other equipment. Many parts with strict reliability and performance requirements employ our technologies.

#### Key Applications

- Automobile power steering motor circuit boards
- Hybrid car DC/DC converters
- Air-conditioner inverter circuit boards
- LED lighting and related products

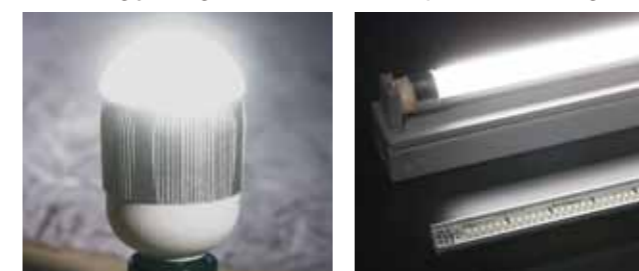
### Applications of Promising Energy-Saving Technology – LED Lighting

LEDs look set to become a mainstream lighting source because they consume far less energy than incandescent and other conventional lights, and they last longer.

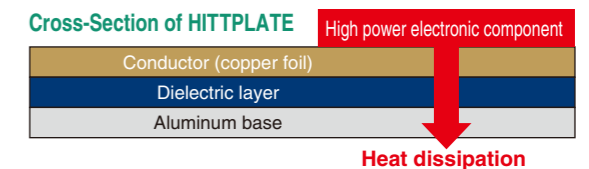
We belong to the Japan LED Association, which has estimated that LED lights deliver around five times the luminous efficiency of incandescent lamps. The association has calculated that replacing all lighting in Japan with LED models would cut the nation's annual carbon dioxide emissions by around 4 million metric tons. This would enable the Japanese government to comfortably clear its Kyoto Protocol reduction target of 3.4 million metric tons per year by 2010 from 1990 levels through measures to spread the use of high-efficiency lighting.

LED lighting must deliver more luminous efficiency and longer service lives to become truly popular. LEDs in lighting fixtures can only convert about 50% of the potential luminous efficiency of their chips, the balance being lost as heat. It is therefore a tremendous technological challenge to combat such losses and fully harness the outstanding attributes of LEDs.

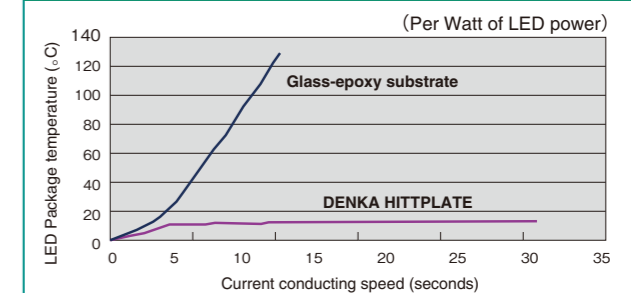
Domestic and overseas LED lighting makers, electrical equipment manufacturers and research institutes are increasingly using DENKA's heat-dissipation technologies.



LED lighting



#### Comparing Conventional Electronic Circuit Boards and Our Thermally Conductive Substrate



#### Light Source Characteristics (calculated for the replacement of each light)

Light Source	Luminous efficiency (lm/W)	Service Life (hours)	Environmental Impact
Power LED	50	40,000	◎
Incandescent lamp	15	2,000	○
Fluorescent lamp	100	5,000	△
Mercury lamp	55	5,000	×

Source: Latest Technologies and Market Trends 2009, by Japan Marketing Survey Co., Ltd. JLEDS the 3rd Symposium lecture data

### Helping Conserve Energy

Energy-saving technologies are constantly progressing for the electronic parts of LED lighting, electrical equipment inverter circuits and other products.

DENKA's heat dissipation technologies come from years of collaboration in ceramics and inorganic materials. We are helping to safeguard the environment and contribute to social sustainability by revolutionizing energy conservation technologies for electronic parts.

#### Salesperson Comment

DENKA HITPLATE incorporates our ceramics and polymer technologies and has a solid market track record, so it enjoys outstanding customer trust.

We have recently been proposing the use of DENKA HITPLATE as a heat dissipation tool for LED lighting, whose technologies continue to evolve. We are confident that we can contribute to technological innovation that conserves energy.

**Satoru Mihara**  
Electronic Materials Division

**SIGMA(Σ) 1000 Additive for High-Strength Concrete that Lowers Carbon Dioxide Emissions**



Cement has long played a crucial role in human progress. Maintaining concrete's performance is essential for modern living. DENKA's special cement additives business focuses on employing chemical technologies to improve the capabilities of cement and concrete. We make several popular offerings in Japan and abroad. One is CSA, an expansion material that reduces cracks and shrinkage in mortar finishes and concrete structures. Others are NATMIC, a quick-setting agent for spraying concrete in tunnels, TASCAN, a nonshrink grouting material, and SIGMA(Σ), a powerful admixture for strengthening concrete.

**Q What does SIGMA(Σ) do?**

This concrete additive reduces the amount of cement required in structures, thus lightening them while improving their resistance to impact and wear.

**Q Why does SIGMA(Σ) make concrete so strong?**

It does this by filling capillary pores with crystals of ettringite, a hydrated aluminum sulfate, to achieve high-strength. This eliminates the need for additional amount of unit cement.

**Q What are the applications of this product?**

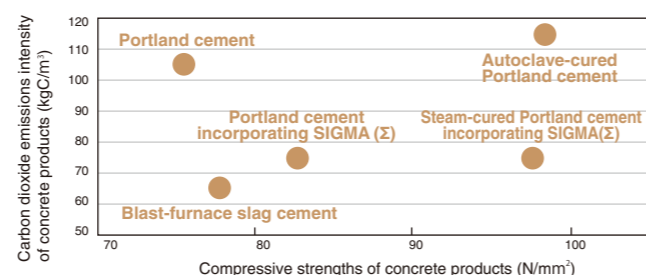
The weight ratio of this additive in cement is around 10%. Key applications include high-strength concrete piles for building foundations, and concrete for dams and rivers, water channels and road surfaces that must resist abrasion and impact.

**Reducing Environmental Footprints with Special Cement Additives**

Life cycle assessments have become an important priority in the construction industry, which is looking to products and repair and maintenance techniques to extend the performance of concrete structures. The industry also seeks ways to cut carbon dioxide emissions.

As a leading manufacturer of special cement additives, DENKA has harnessed its chemical technologies to innovate solutions to these issues while collaborating with other companies and public bodies to develop and commercialize new offerings that contribute to a sustainable social infrastructure.

**Carbon Dioxide Emissions Intensities and Compressive Strengths of Concrete Products**



**Sales Person Comment**

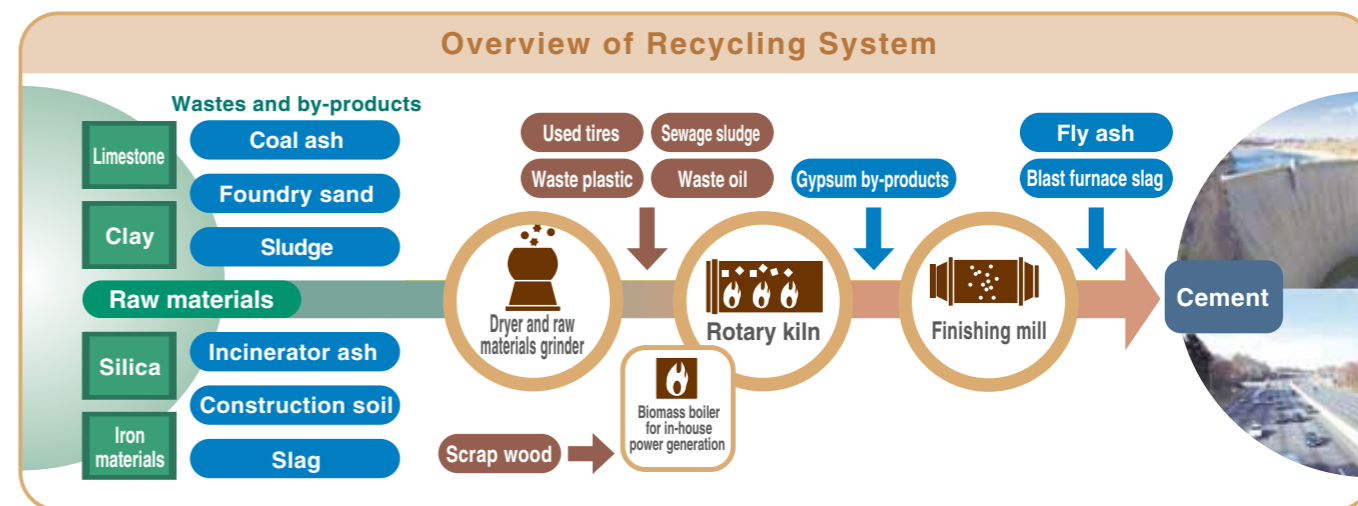
Downturns in public construction projects and a prolonged slump in private sector demand have hit the civil engineering and construction industries hard. This situation is an excellent opportunity for DENKA to highlight its years of experience in product development and its technologies for conserving energy and the environment. We aim to deepen our market presence to identify what customers truly seek in endeavoring to boost concrete performance.



**Takashi Sasaki**  
Cement & Special Cement Additives Division

**2 Fostering Cement Recycling**

We maintain a system to recycle all our raw materials and fuels as cement.



**Recycling Coal Ash, Sewage Sludge and Other Resources**

The plant has earned top marks for contributing to the community through its operations. It uses by-products from its operations and accepts coal ash from the thermal power stations of electric power companies, and receives tires and waste plastic. It also gets sewage sludge and household waste from local government bodies. The plant recently began converting construction soil into cement materials, helping extend the lives of final disposal sites.

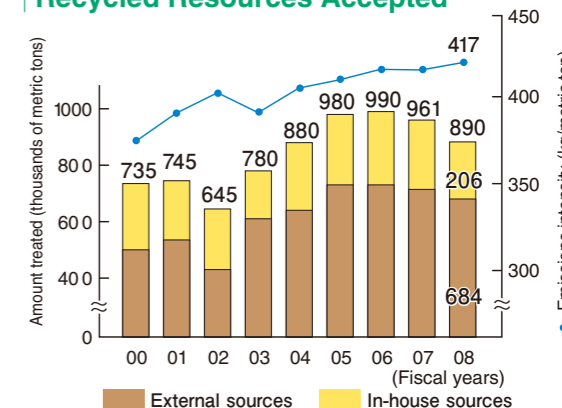
Every metric ton of our cement incorporates about 417 kilograms of recycled materials. We accepted 684,000 metric tons from external sources in fiscal 2008.

**Contributing to Sustainability**

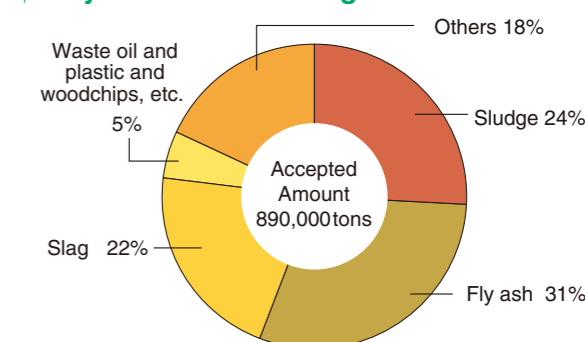
Our cement recycling business is a key ongoing contribution to the community. Another factor in recycling scrap wood, plastic and other alternative wastes is that we aim to alleviate global warming by helping reduce the consumption of fossil fuels.

We will continue to refine our technologies for converting wastes and by-products to foster social sustainability well into the future.

**Recycled Resources Accepted**



**Recycled Material Categories**



**Stakeholder's Opinion**

We built our waste treatment facilities in 1982. As they aged, we made it a top priority to plan upgrades, as part of which we built a waste treatment network with the collaboration of DENKA and other local cement makers. One recent move was to carbonize waste instead of burning it, so it could be used in cement.

Since 2002, we have carbonized around 3,200 metric tons of waste annually, significantly reducing the amount of incinerator ash. I think that this and other public and private sector recycling efforts have contributed to social sustainability.



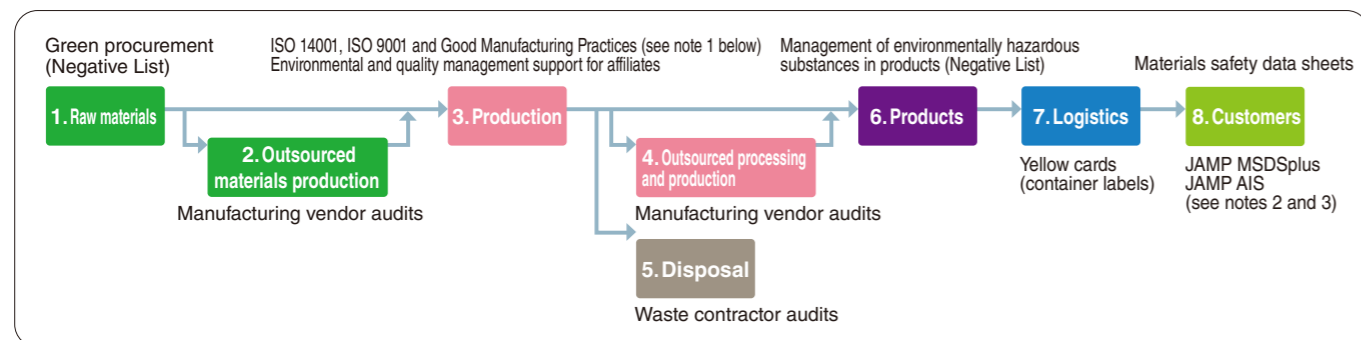
**Mr. Isamu Watanabe**  
General Manager of Itoigawa Sanitation Center, Niigata Prefecture



# 3 Maintaining Product Safety

We ensure safety in all our processes, from raw materials procurement to research, production, logistics, consumption and disposal.

## Materials Safety and Management Flowchart



## Management of Product Safety in All Processes

### Managing Supply Chain Safety

#### 1. Green Procurement

We produced a Negative List that defines customer's voluntary measures and all substances subject to Japanese and international environment management and hazardous materials regulations. Our raw materials and manufacturing processes increasingly comply with list requirements.

#### 2&4. Manufacturing Vendor Audits

We outsource some raw materials production processes and semi-processed goods. We regularly audit manufacturing vendors based on our standards for quality, logistics, environmental management and product safety.

#### 3. Environmental and Quality Management Support for Affiliates

We share information with the consolidated affiliates presented on pages 50 and 51 of this report to ensure that they meet our quality, environmental and safety management standards.

#### 5. Waste Contractor Audits

We commission waste contractors in keeping with the Waste Management and Public Cleansing Law, requiring them to issue manifests and confirm collection. We regularly evaluate the operations and financial positions of these vendors and visit their sites.

#### 6. Management of Environmentally Hazardous Substances in Products

As part of our commitment to quality and safety and minimizing our environmental impact, our Negative List records all by-products and impurities that may be hazardous to humans or the environment (or animal diversity).

#### 7. Displaying Yellow Cards and Container Labels (see note 4)

Accidents while transporting some products could cause significant environmental damage. We therefore require drivers to carry yellow cards that explain post-accident procedures. We also label containers to ensure swift and proper remediation. We regularly inform drivers of our requirements and conduct emergency drills.

#### 8. Materials Safety Data Sheets (MSDS)

We produce these sheets for all products to ensure proper handling according to physical and chemical hazards and health and environmental risks. The sheets inform customers and help educate employees. We regularly revise the sheets in keeping with regulatory trends and distribute all information to customers. We are revising our sheets in line with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The sheets enable customers to use and dispose of our products safely without harming animal diversity. We have begun disseminating information on environmentally hazardous substances in our products through the Joint Article Management Promotion-consortium's Material Safety Data System plus and Article Information Sheet systems.

#### Notes

1. Good Manufacturing Practices refers to standards that Japan's Ministry of Health, Labour and Welfare established in its Ministerial Ordinance on Standards for Manufacturing Control and Quality Control for Drugs and Quasi-drugs. 2. The Joint Article Management Promotion-consortium (JAMP) is a cross-industry association established in Japan in 2006 to encourage companies to properly manage information on substances and compounds, as well as chemical substances in parts, plastics and other articles and to establish mechanisms to disclose and present information on supply-chain products. 3. JAMP's Material Safety Data

## Collaborating in Chemical Industry Initiatives

### High Production Volume Program (HPV)

We and other companies collaborate under the auspices of the International Council of Chemical Associations to evaluate the safety of around 1,000 substances that the Organisation for Economic Co-operation and Development has designated. These substances are used heavily worldwide.

### Japan Challenge Program

Under this program, manufacturers are working with the Ministry of Health, Labour and Welfare, the Ministry of Economy, Trade and Industry and the Ministry of the Environment to collect, disseminate and assess safety

information on around 700 chemical substances. We are participating in areas of the program that relate the substances that we use.

### Long-Range Research Initiative

The Japan Chemical Industry Association, the American Chemistry Council and the European Chemical Industry Council oversee this program, in which we are collaborating. It entails long-term basic research into endocrine disruption by chemical substances, cancer from neurological exposure to toxic chemicals and endocrine hypersensitivity from exposure to chemical substances.

# 4 Management Systems

We are pursuing ongoing improvements based on our quality and environmental management systems. We have secured ISO certifications as follows.

	ISO 14001		ISO 9001		Products covered
	Date certified	Registration number	Date certified	Registration number	
Omi Plant	October 16, 1999	187071 / A (BV)	August 19, 1994	275156 (BV)	Chloroprene, POVAL, ASR, SAKNOHOL, butyral, special cement additives, cement, arsenic chemicals, monochloro acetic acid, sodium monochloroacetate, caustic soda, monosilane, dichlorosilane and hexachlorodisilane
Omuta Plant	October 28, 2000	284330 (BV)	November 7, 1998	439189 (BV)	Fused silica, special cement additives, nitride powder, ceramic substrates, steel additives, acetylene black, calcium aluminate cement, FIRELEN, boron, boron carbide powder, thermally conductive materials and heat sinks
Chiba Plant	May 31, 1999	180943 (BV)	March 22, 1995	155885 (BV)	Polystyrene, acrylonitrile styrene resins, methyl methacrylate styrene resins, methacrylate-butadiene-styrene resins, methacrylate acrylonitrile butadiene styrene resins, acrylonitrile butadiene styrene resins, styrene-maleimide copolymers, styrene-butadiene copolymers, vinyl acetate, ethylene vinyl acetate copolymers, acrylic rubber, polystyrene sheet, acetic acid, styrene monomer, toluene, ethyl benzene, rain gutters, vinyl tape, corrugated pipes, duct hosing, wall ducts and polyvinyl chloride
Shibukawa Plant	May 21, 2001	363444 (BV)	October 23, 1996	484541 (BV)	Metal substrates, resin compounds, adhesives, emitters, thermally conductive spacers, thermally conductive adhesive sheets, electromagnetic shields and Elegrid Tape
Ofuna Plant	November 9, 2001	JQA-EM1895 (JQA)	October 25, 1996	JQA-1429 (JQA)	Packaging tape, plastic films, polyvinyl chloride fibers, and emboss carrier tape for taping
Isesaki Plant	September 30, 2003	1090712 (BV)	February 28, 2008	428794 (BV)	Stretch films, food packaging sheets, electronic packaging sheets and cover tapes
Central Research Institute	July 5, 2004	352185 (BV)	—	—	

System plus and Article Information Sheet systems provide standardized formats for presenting information on substances subject to management. Material Safety Data System plus is mainly for substances and agents that are upstream in the supply chain. Article manufacturers produce Article Information Sheets based on that information. JAMP aims to spread its systems throughout Japan and Southeast Asia. 4. The Japan Chemical Industry Association created a labeling format to augment the Yellow Card system. The labels present emergency guideline numbers and United Nations identification numbers for different chemicals transported in relatively small amounts on the same vehicle. The labels aid proper handling of these chemicals in emergencies.

## Social Contributions

We aim to remain essential to society by communicating and invigorating the areas in which we operate.

DENKA  
**Omi Plant**

### Helping Eliminate Drunk Driving

The Omi Plant responded to a request from the Itoigawa Police Station to represent local businesses in the collection of signatures for a campaign to stamp out drunk driving. The station chief gave the plant a shield declaring its commitment to the initiative and sought assistance with year-end and New Year campaign efforts.

Drunk driving is a criminal act. Therefore, the plant will keep exhorting employees and the community to refrain from driving after drinking alcohol and thus contribute to traffic safety.



DENKA  
**Omuta Plant**

### Collaborating with Citizens' Hall in Cleanup Drives

Since 1994, the Omura Plant has joined with the local citizens' hall in annual volunteer cleanup drives during Environment Month initiatives in the spring and the autumn. The plant will continue to participate in these community efforts.



DENKA  
**Ofuna Plant**

### Engaging with the Community through the Summer Festival

Every year, the Ofuna Plant makes its grounds available to the Fujimicho Town Association for the enjoyment of local residents on the day of the Summer Festival. More people than usual crowded into the plant in 2009. A brass band from a local primary school played to great applause and members of the plant's popular music club also performed, to the enjoyment of the public. On the following day, local children carried the Shioyama Shrine's mini-shrine around the town, visiting the plant along the route.



DENKA  
**Chiba Plant**

### Participating in Goi Rinkai Festival

In fiscal 2008, the Chiba Plant operated a booth at the 35th annual festival as a local enterprise. The event attracted around 10,000 people. In summer 2008, the plant invited the local community to the Denka Summer Festival at its employee housing estate.



DENKA  
**Isesaki Plant**

### Neighborhood Cleanup Program

In fiscal 2008, the Isesaki Plant expanded its monthly beautification day efforts beyond its premises to encompass semiannual cleanups of neighboring areas, which take place following its morning assemblies. Employees weed and collect empty beverage cans, fallen leaves and other waste from the streets. Their work includes cleaning up nearby Bando Park and around the plant in the Ota area.



DENKA  
**Shibukawa Plant and Head Office**

### Sponsoring Friendship Concerts



DENKA sponsored public performances of the Fureai Trio (Kyoko Yoshida and friends) in Shibukawa on June 12 and 13, 2009.

Ms. Yoshida played violin, with Mr. Genichi Watanabe on the cello and

Mr. Mitsutaka Shiraishi on the piano. The concert was part of Fureai Trio initiatives by the renowned classical musicians. These constitute the Friendship Program, which is for performances at schools, Friendship Concerts for the general public and the Friendship Market, which comprises stalls run by the disabled at music events.

The June 12 event was for elementary school students. They thoroughly enjoyed this rare concert opportunity, as part of which they tried playing the violin and participating in a body percussion performance. The June 13 event was for members of the general public, who additionally deepened their ties with the disabled by buying items from Friendship Market stalls.

The plant will continue to engage with the community through various initiatives.

DENKA  
**Shibukawa Plant**



### Weeding Around Hydrangeas

In 1999, the Shibukawa Plant planted around 8,000 Annabelle hydrangeas along a 2,000-square meter median strip of National Highway 17. We undertook this effort with what is now the Ministry of Land, Infrastructure, Transport and Tourism and Shibukawa City, for which this hydrangea variety is the city flower. Nakamura Council takes care of the flowers and the plant participants in afforestation efforts. Plant employees remove weeds more than a dozen times every year.

The city has designated the area as a special attraction for passers-by, as the flowers produce a beautiful carpet of white in late June. One benefit is that drivers are far more careful in the zone, enhancing traffic safety.



DENKA  
**Central Research Institute**

### Holding Children's Chemistry Classes



The Central Research Institute in Machida, Tokyo, held its first children's chemistry class on June 14, 2009, for members of the Machida Youth Firefighters. A total of 41 people participated in this event. They included the 26 boys and girls from the brigade who range from the second year of elementary school to the third year of junior high school, as well as instructors, volunteers and representatives from the Machida Fire Station.

The children used CLEAREN (see note below) to create labels, slipping them over PET bottles and heating them to shrink the film. They also experimented with shrinking OPS sheets to make accessories. The children then took the bottles home as souvenirs. The Central Research Institute plans to undertake other activities to deepen community relationships.

Note: CLEAREN is our styrene-butadiene block copolymer brand.

# Cultivating Our Employees

Human resources development is one of six key DENKA100 priorities, as our people are central to our growth. We create environments that harness the skills of all employees.



General training course

## 2 Good Company Program 2.0 Initiatives in Fiscal 2008

We instituted this program, known as GCP 2.0, as part of efforts to raise employee awareness and reform operations, resolving problems in the pursuit of excellence.

We held our seventh DENKA100 Presentation in June 2008 for 10 groups to overview activities in the second half of fiscal 2007. Three domestic and overseas groups delivered special talks on their endeavors.

The eighth presentation in December 2008 saw 12 groups participate, with two groups from head office and a plant made special presentation.

Other initiatives to promote DENKA100 include issuing DENKA100 News, displaying posters in-house and distributing memo pads incorporating calendars.

### GCP 2.0 Exchange Seminar

We have held these gatherings at the Omi and Chiba plants to enable employees to exchange information with the people of other business units.



GCP 2.0 seminar at Chiba Plant



GCP 2.0 seminar at Omi Plant

### Sales and Production Management Project Efforts

This initiative aims to improve productivity and customer satisfaction by sharing information between sales and manufacturing units. Key efforts in fiscal 2008 were as follows:

- Improve the inventory management system
- Preserve our technological and skills bases



Attendees at DENKA100 Presentation

DENKA100 News

GCP 2.0 poster

Memo pads incorporating a calendar

## 1 Employee Education

The programs of our Human Resource Development Center help employees develop their career paths.

### In-House Education and Training

#### Personnel Requisites

- (1) Strive constantly to better yourself through business and social activities
- (2) Always respect others and remain humble and positive
- (3) Always be selfless
- (4) Drive change through teamwork
- (5) Gain broad insights, superior problem-solving skills and the ability to transform potential into reality
- (6) Be cost-conscious



#### Anticipated Fruits of Training

- 1 Personal Growth:**  
Harness greater skills, knowledge, techniques and performance to boost profits
- 2 Organizational Growth:**  
Improve team performance through collaboration within and between business units
- 3 Corporate Growth:**  
Enhance DENKA's profitability, brand and reputation

### Key Programs

#### 1 Mandatory Job Level-Based Training

Under these programs, employees acquire the knowledge they need to fulfill their duties. We train new managers, young employees in their fifth year with DENKA, and other employees. The main focuses are such business fundamentals as compliance and other legal areas, as well as safety initiatives. We trained nearly 250 employees in fiscal 2008.

#### 2 Specialist Courses

In fiscal 2008, more than 300 employees took accounting, business, information technology, trade, investor relations, corporate social responsibility and purchasing courses.

#### 3 Educational Support

We assist employees taking language classes and correspondence courses. We also support those seeking to

acquire certain formal qualifications.

#### 4 Business Unit Training

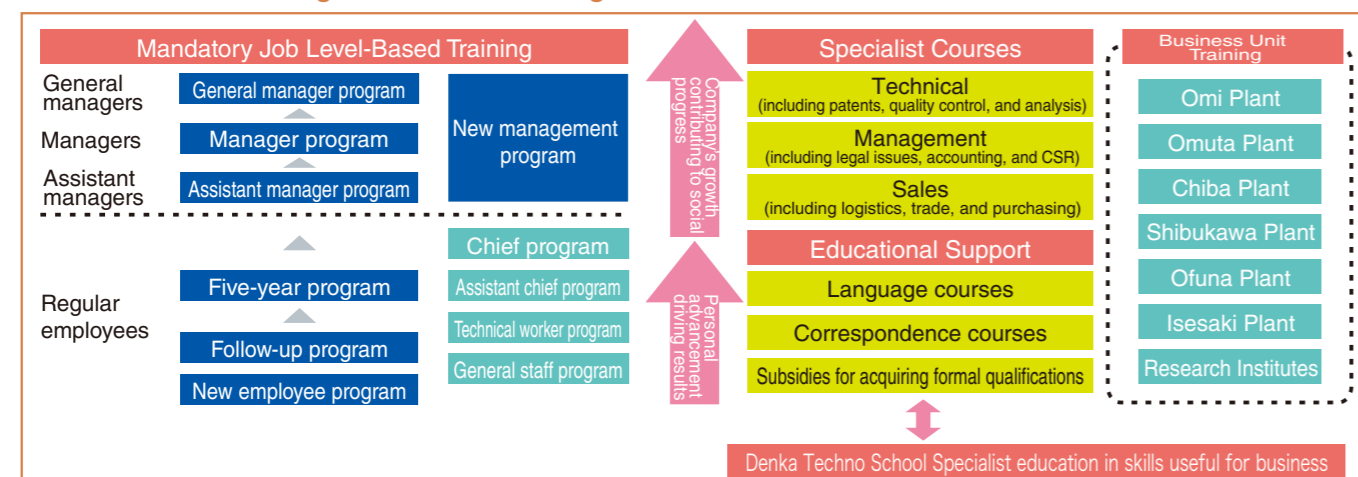
Each business unit identifies areas needing improvement and formulates and implements its own programs. There is a constant focus on establishing, planning and executing original educational and training programs according to each operation to help improve the knowledge and skills of every individual employee.

#### 5 DENKA Techno Schools

Each business unit has opened a techno school to preserve our technological and skills resources and provide employees with expert and practical knowledge.

The schools encourage employees to grow by making it fun to learn and use their capabilities in the workplace.

### Overview of Training and Educational Programs



## 3 Respecting Diversity

We maintain various programs to provide comfortable working environments for all employees.

### Employing People with Disabilities

We are creating safe workplaces so people with disabilities can realize their potential.

### Reemploying Retirees

In April 2004, we launched a program to rehire retirees to harness their technological knowledge and skills and pass them to younger employees. At the end of May 2009, we had 263 employees who were retirees we reemployed.

### Preventing Sexual Harassment

We formulated a policy to prevent sexual harassment and have thoroughly informed employees about it through our in-house newsletter and our electronic bulletin board. The Ethics Committee maintains a consultation desk to handle employee concerns.

Our work rules and labor agreements contain disciplinary regulations regarding sexual harassment.

#### Percentage of Employees with Disabilities

Fiscal 2006	Fiscal 2007	Fiscal 2008
1.85%	2.02%	1.93%

Note: These calculations are based on non consolidated figures.

## 4 Labor and Management Relations

Management maintains positive relationships with employee organizations, regularly meeting with officials of the The Denki Kagaku labor Union and The Head office

labor Union based on mutual good faith and otherwise negotiating with these bodies.

# 5 Occupational Safety and Health, Security and Disaster Prevention

**We endeavor to maintain safe and comfortable workplaces and prevent disasters for society's peace of mind.**

## Occupational Safety Record

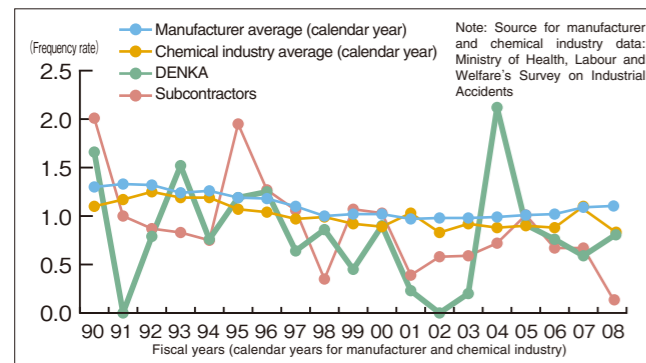
The number of people involved in occupational accidents requiring time off was as follows. The figures in parentheses are the accident frequency rates.

DENKA 4 (0.80)  
Subcontractors 1 (0.13)

$$\text{Accident frequency rate} = \frac{\text{Number of deaths and injuries}}{\text{Total number of working hours}} \times 1 \text{ million}$$

The rate if two people per 1,000 employees suffered accidents would be about 1.0.

The graph below plots the accident frequency rates.



In response to occupational accidents injuring 10 employees in fiscal 2004, we required departmental and section managers to assess sites and ensure safety. These considerations prompted us to deploy our Good Company Program (see page 21) and build our Occupational Safety and Health Management System. We convene regular gatherings for Good Company Program announcements as part of ongoing safety enhancement initiatives.

## Occupational Safety and Health Management System

The Chiba Plant acquired OHSAS 18001 certification for satisfying occupational health and safety standards. The Omi Plant is building its occupational safety and health management system so it can qualify during fiscal 2009. The Omuta Plant is similarly working on such a system.

### Manager Report

Koichi Ishibashi, Environment and Safety section, Chiba Plant

We built and run an OHSAS 18001-compliant setup at the Chiba Plant.

It is naturally important to manage records and other documents and ensure compliance. We went one step further by establishing rules for internal audits and management reviews. We are therefore in a position to assess our achievements and identify the focuses of future efforts, thus maintaining complete control over them.



Other plants and research facilities are improving their systems, notably by using risk management techniques and Plan-Do-Check-Act cycles in safety initiatives.

## Occupational Safety Activities

We focus Companywide on risk assessments for facilities, chemical substances and operations. We deployed risk assessments to ensure the safety of Contract workers. They conduct preliminary evaluations before work starts and consider ways to reduce risks, including through using protective equipment and assigning people to monitor the work. DENKA maintains systems to check these processes.

Managers provide instructions and related business units offer support so operators can embrace the following qualities.

- **Knowledge:** Notably of laws and ordinances, proper operation of facilities and equipment, chemical hazards and the principles of chemical reactions
- **Skills:** Including for safe working practices and procedures and expertise in designing safe facilities and equipment design
- **Awareness:** Predicting risks and maintaining risk alertness

## Occupational Health

We emphasize mental health measures, educate business sites in line with their specific circumstances, secure assistance from industrial physicians and local health care institutions, and guide individual employees. We strive to prevent and swiftly detect mental disorders and create working climates that are conducive to emotional well-being.

We hold meetings before work starts every day to confirm that our employees are in good shape, since health management is fundamental to safety.

## Security and Disaster Prevention

During the year, we experienced no fires, explosions or leaks of hazardous materials that would significantly affect the communities in which we operate, although there was a trouble at a high-pressure gas facility.

### Example accident:

Ethylbenzene leaked from a styrene monomer facility at the Chiba Plant in December 2008. This was due to external corrosion of a small-diameter nozzle.

### Lesson:

Change the way we monitor external corrosion on piping. We previously used warning lamps to assign priorities for the fluid temperatures of each pipe. We now monitor corrosion on all small-diameter nozzles.

In fiscal 2008, 13 security problems led to temporary operating disruptions, more than the previous year. We will step up our security and disaster-prevention efforts and strengthen measures to minimize accidents.

We organize safety management conferences to centralize the expertise and experience of our employees and conduct emergency drills, as described on page 25.

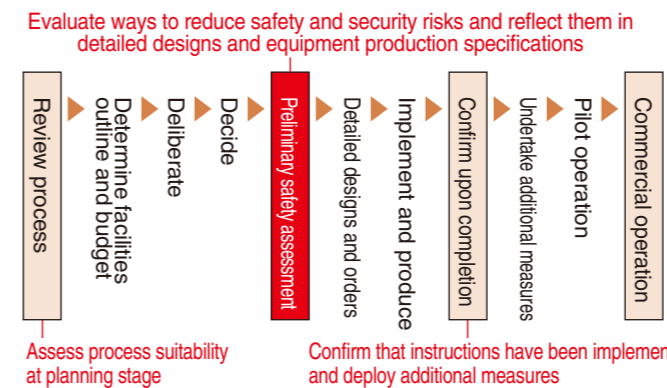
We accord top priority to change management and improving production stability.

## Change Management

This encompasses establishing rules to assess risks and implement measures where needed for changes in the 4Ms — man, machine, materials and methods.

Preliminary safety assessments are important when building plants that use new processes. Change management comes into play when we upgrade or modify facilities.

Facilities and operations units conduct preliminary safety assessments and gather with in-house third parties to discuss risks relating to fires, explosions and worker safety.



### Manager Report

Masatomo Ishii, Industrial Material section Isesaki Plant

On sheet product manufacturing, our mission is to ensure that there are no operational accidents after processes have been approved. We have done this by conducting risk assessments that compare with other plant facilities, considering measures and reflecting the findings in designs. During deliberative gatherings some have pointed out serious shortcomings with preliminary assessments. However, this was good because we were then able to better understand the production processes and the facilities and equipment to choose, reconfirming the operational precautions that we needed to take.



## Improving Production Stability

Our security standards not only ensure that we operate within predetermined limits but also that we maintain optimal operating conditions by reviewing the operations and facilities. For example, we rigorously investigate the operational causes of warnings and make improvements to prevent fluctuations that lead to such circumstances.

## Safety Education

We provide programs that are specific to each business site. We are improving experiential education and teaching materials.

## Experiential Education

We devote considerable effort to educating our employees to identify risks and responses. Examples include simulations of the dangers of ignitions from static electricity, being caught in machinery, cuts and falls, so employees learn the importance of following procedures and using the correct protective equipment.

### REPORT Report from a Participant in the Safety Class

The Omuta Plant maintains facilities to simulate various dangers and each workplace can use them for drills. I learned a lot from one piece of equipment, which demonstrated how easy it is to get a hand caught in slowly rotating equipment. I also learned the importance of immediately switching machinery off when a problem occurs.



## Producing Teaching Materials

We ensure through teaching materials that everyone can work safely, even people newly assigned to work areas.

### REPORT Report from Education Leader

Many people without factory experience have recently joined the Company. Therefore, we created readily understandable materials that show what employees must do to avoid injury.

For a start, we used photos to show them clothing and no-contact locations to ensure that people undertake tasks after fully understanding them. We then created teaching materials a week or a month later so people would remember work stages.

As a result, even new employees don't hesitate to ask questions, so I think our materials have helped to improve communication.



Special Feature

The Source of DENKA's Cement / Calcium Carbide Production

# Safety Initiatives at the Omi Mine



Commemorative photo of Omi Mine office personnel during National Safety Week 2009

The Omi Mine in Itoigawa, Niigata Prefecture, is one of the few Japanese producers of top-grade limestone. The mine is home to the Ore Section of the Omi Plant's Resources Department. In fiscal 2008, the mine extracted 3 million metric tons of limestone from mining rights held by DENKA at Mt. Kurohime, the reserves of which are an estimated 5 billion metric tons. This raw material goes by conveyor belt and truck 365 days of the year to the nearby plant to produce calcium carbide, calcium cyanamide, chloroprene rubber etc. The mine operates the following Japan's biggest heavy machinery models to efficiently transport limestone. Models: Caterpillar 793C mining truck—able to haul up to 218 metric tons of material;

Hitachi Construction Machinery EX3600 mining shovel—featuring a bucket capacity of 40 metric tons.

Blasting crushes the limestone bedrock. A hydraulic loading shovel scoops up 30 to 35 metric tons of the material per time and dumps it in the truck, which drops it in a shaft. The limestone then travels through a tunnel to a machine that sorts it into the required sizes, after which we transport it to plants.

## The Base for DENKA's Petrochemicals Business Disaster Prevention Activities at Chiba Plant

The Chiba Plant is in the Keiyo coastal industrial district near the center of Goi Minamikaigan in Ichihara City. This is Japan's largest petroleum complex, storing oil and handling hazardous substances (in keeping with the Fire and Disaster Management Act) and potentially explosive high-pressure gas (under the High-Pressure Gas Safety Act).

The plant is one of Japan's biggest manufacturers of styrene monomer. It also makes polystyrene, ABS resin, transparent plastic, CLEARON and other styrene-based products, as well as such petrochemical offerings as vinyl acetate monomer, synthetic rubber and polymer processing products.



### 1 Sharing Information

#### (1) Meetings (photo 1)

Meetings work heads, morning assemblies and group gatherings share information with all personnel in discussing the day's tasks and confirming who will visit the site.

#### (2) Radio Communications (photo 2)

We have installed radios on all heavy machinery and vehicles to instruct operators and inform of constant changes in the work environment.

#### (3) Heavy Equipment Safety (photo 3)

Operators use monitors to confirm safety, as large machinery has numerous blind spots. When site visitors approach the machinery, operators halt work and assume a prescribed stance.

#### (4) Blasting

All workers evacuate to a rest area during blasts at appointed times every day. A siren sounds before firings.

### 2 Safety Education

#### (1) Experiential Learning

Our massive mining trucks could easily crush small work vehicles, so we train in confirming blind spots and have operators actually run over abandoned vehicles to demonstrate the damage. We also use



Camera at rear of machinery

EX3600 mining shovel and car

dummies to show the risks of being caught in belt conveyors.

#### (2) Disaster Drills and Safety Education for Subcontractors

We perform a wide range of drills, including for emergency treatment of chainsaw injuries, for mine evacuation while wearing respirators and for operating automatic external defibrillators.

We run a training program for subcontractor personnel who enter the mine. In fiscal 2008, around 250 of these people received course completion certificates, which are valid for three years.

### 3 Risk Assessments

These initiatives designate work site risks and hazards and evaluate risk levels, implement risk reduction measures and produce records. The Industrial Health and Safety Law mandates risk assessment efforts.

The Omi Mine conducts Group-specific risk assessments to improve facilities based on evaluations of hazards and lower disaster risks.

An on-site opinion box helps create a better working environment by accepting requests and proposals on safety and other issues. The Safety and health Committee reviews and responds to this feedback once per month.

Requests include those for installing or updating signs, improving blast work report boards and maintaining fixtures.

#### Comment from Site Managers

The Omi Mine has been accident- and disaster-free for 16 straight years. In fiscal 2008, we received another Gold Award for Mining Excellence from the Minister of Economy, Trade and Industry and other external recognition. However, we are not resting on our laurels and will continue to maintain an accident-free workplace.

We aim to ecologically improve the site, covering mined areas with soil and plants and seeding slopes. We aim to add at least 1,500 square meters of vegetation per year to the site.



Mamoru Sumita (left), General manager of the Mining Department and Nobutaka Kawata, manager of Mining Section

### Collaborating with Other Companies within the Complex under Government Guidance in Disaster Prevention Initiatives

Any disaster at the complex could cause massive human and property damage. Considerable legislation thus governs the facilities, notably the Fire and Disaster Management Act, the High-Pressure Gas Safety Act and the Basic Act on Disaster Control Measures, as well as the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities.

As a business within the area of Ichihara-city Special Disaster-Prevention District in Petroleum Industrial Complexes and other Petroleum Facilities. The Chiba Plant maintains a system and facilities to safeguard against mishaps in keeping with instructions from Chiba Prefecture and Ichihara City and works with other nearby businesses to evaluate disaster-prevention measures and conduct drills. We will continue working on policies to prevent and contain disasters at the complex.



Drills at the Chiba Plant as part of initiatives of the Council for the Ichihara Petrochemicals Complex Special Disaster-Prevention District

#### Goi District Disaster-Prevention Policy Council



Our body comprises 25 companies. Its mission is to prevent or contain disasters within the complex by sharing information between members and undertaking collaborative surveys and research. Other efforts include conducting drills and maintaining security at related business sites and within the area to support production.

**Mr. Mikio Tomobe**  
Manager  
Goi District Disaster-Prevention Policy Council Secretariat (Cooperative Self Defence)  
Executive Director  
Goi Joint Disaster Prevention Council (Self Fire Guard)

#### Ichihara Fire Department



The coastal industrial area encompassing Chiba, Ichihara and Sodegaura is designated as a special disaster-prevention zone of the central Keiyo coastal district. The Ichihara Fire Department has deployed comprehensive disaster-prevention measures that harness the collaboration and support of businesses in emergencies to prevent mishaps from occurring or escalating at the complex.

**Mr. Yukio Jibiki**  
Manager  
Ichihara-city Fire-Prevention Section

### Tri-party Collaboration in Local Fire-Prevention Activities

#### Chiba Plant



We operate our own fire brigade as part of our fire-prevention organization. The plant layout includes unoccupied land and special roads to eliminate any obstructions to firefighting. We maintain firefighting equipment and conduct drills.

As a business within the Ichihara Petrochemicals Complex Special Disaster-Prevention District, we joined with nearby compa-

**Fukuaki Wada**  
General Manager  
Environmental, Safety and Technical Department  
Chiba Plant

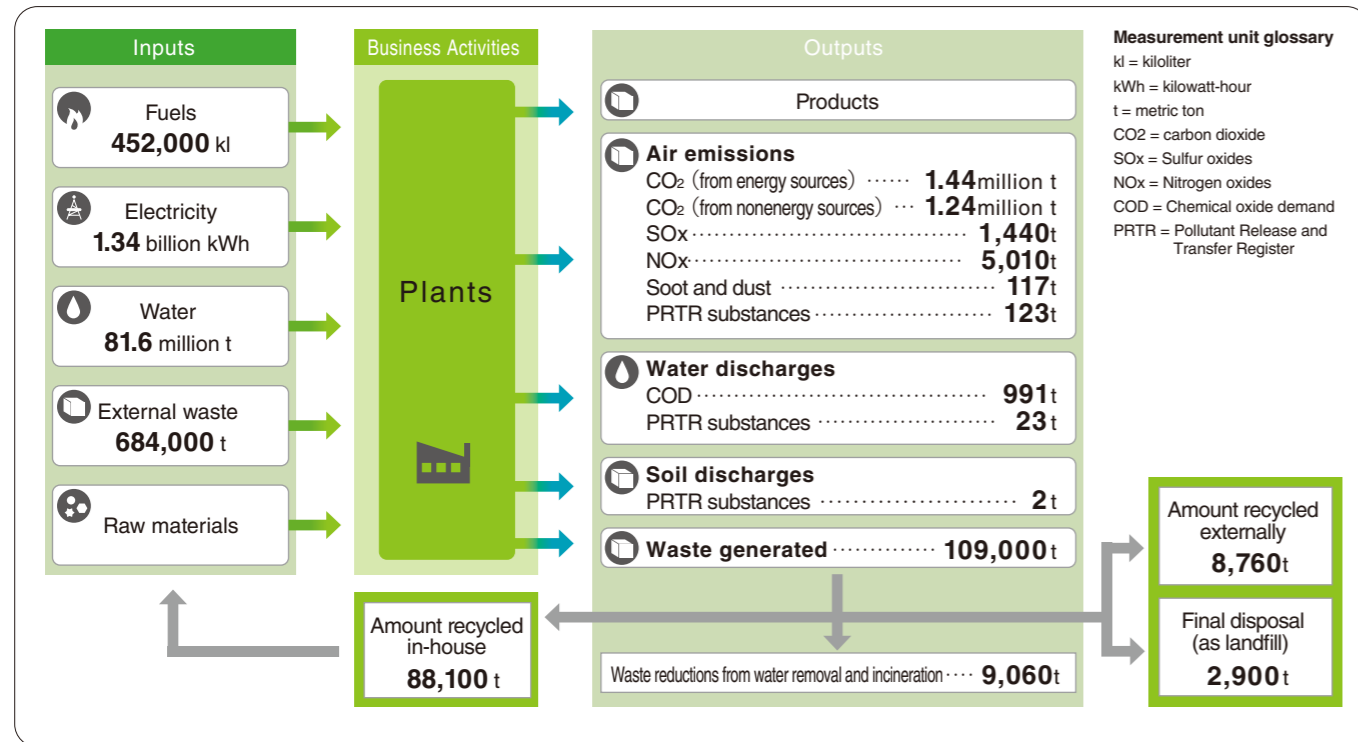
nies to create the Goi District Disaster Prevention Policy Council to undertake safety initiatives and strengthen collaboration. Members share a large chemical fire truck through the Goi Joint Disaster Prevention Council.

We use community gatherings of the Ichihara Branch of the Japan Responsible Care Council and other opportunities to explain our activities to local residents and engage in dialogue.

In this section, we report on progress with Group environmental efforts.

1 Inputs and Outputs

Total environmental impact of all business sites in fiscal 2008



Explanation of Inputs

- Fuels are the sum of all fuels used at each business site, converted into heavy oil equivalents on a calorie basis. They include fuels for our in-house power plants.
- Electricity is the total hydroelectric and purchased power.

Explanation of Outputs

- CO<sub>2</sub> emissions are totals from in-house fuel production and from electricity purchases.
- COD is equivalent to biochemical oxide demand discharges in rivers.
- External waste recycling covers materials converted externally into resources or fuel.
- Final waste disposal refers to materials buried in external landfill sites.
- Waste reductions are mainly from incineration.

This environmental impact data encompasses our plants and major affiliates within those facilities.

Main affiliates

At Omi Plant: Denal Silane, Denak and Juzen Chemical

At Chiba Plant: Chiba Styrene Monomer, Toyo Styrene and Taiyo PVC

1 Medium-Term Environmental Plan

We are pursuing environmental improvements as part of medium-term initiatives.

We instituted our third environmental management plan, called EM09. This three-year initiative ends in fiscal 2009, and aims to conserve energy, lower pollutant release and transfer register emissions, and address

wastes.

We reached our waste final disposal objectives in fiscal 2008, but were off-target in terms of energy conservation and pollutant release and transfer register emissions. We are analyzing the reasons for this, and will deploy the solutions from next fiscal year.

Medium-Term Environmental Plan	EM09			
	Fiscal 2007	Fiscal 2008		Fiscal 2009
		Actual	Target	Actual
Energy conservation (with fiscal 1990 as base year)	90%	88%	94%	89%
Emissions of PRTR substances	210 t	167t	148t	137t
Final waste disposal	2,930t	2,390t	2,900t	655t

Fiscal 2008 Responsible Care Objectives and Achievements

Assessment codes:  
A = Reached target  
B = Partially missed target  
C = Missed target

Key Area	Initiatives and Final-Year Targets	Fiscal 2008		Evaluation	Relevant Page	
		Goals	Achievements			
Conservation	Prevent global warming and conserve energy	Lower energy consumption to below 90% of fiscal 1990 levels by fiscal 2010	Lower energy consumption to 88% that of fiscal 1990	The Omi Plant conserved energy by operating its cogeneration facilities at full capacity and increasing water turbine efficiency at the Oarni Power Plant. Nonetheless, our energy consumption unit dropped to 94% because production volume of our products plunged around 80%	C	28
	Prevent air and water pollution	Implement EM09 environmental plan, covering fiscal 2007 through 2009	NOx : 6,040t SOx : 1,850t Soot and dust : 163t COD·BOD : 1,130t	NOx : 5,010t SOx : 1,440t Soot and dust : 117t COD·BOD : 991t We reached our goals because overall production plunged in the second half of the fiscal year	A	32
	Reduce waste (zero emissions)	Constrain and reduce wastes		Emissions dropped because we recycled wastes to resources in-house and improved production processes to waste reduced	A	33
		Recycle resources	In-house and external reuse: 108,000t	We progressed in reusing resources at our cement plant and through external recycling, but we were unable to reach our target. Actual result was 96,900 t	C	
		Cut final disposal to less than 1,200t by 2010	In-house and external landfill: 2,390t	The Omuta Plant greatly reduced final disposal by reusing more resources, but landfill at the Omi Plant increased because of a shortfall in internal recycling capacity. Overall final disposal thus declined only 30t, to 2,900t, so we failed to reach our medium-term target	C	
	Use resources effectively	By 2010, raise wastes and byproducts in cement to 400kg/t and contribute to recycling	Increase wastes and byproducts in cement to above fiscal 2007 level of 406 kg/t	· We increased wastes and byproducts in cement to 417 kg/t · We attained our target for recycling and reusing industrial wastes	A	15
Product safety	Manage chemical substances	Supply materials safety data sheets and other product safety information and identify and consider complying with overseas chemicals regulations, including the European Union's Registration, Evaluation, Authorization, and Restriction of Chemical Substances (REACH)	· Comply with REACH · Accommodate Globally Harmonized System of Classification and Labelling of Chemicals (GHS)	· We followed up based on implementation guidance for REACH regulations · We followed up on GHS trends and implemented initiatives in Taiwan	A	16
	Manage chemical substances and suppress emissions	Lower emissions of substances on PRTR to less than 137 t by fiscal 2009	Cut Companywide emissions of substances on PRTR to 167 t	We slashed emissions 30%, from 210t to 148, owing to planned improvements at each plant and enhanced removal equipment efficiencies	A	33
	Ensure safe transportation	Fulfill responsibilities as owner of shipped goods	· Target a zero accident rate for in-house and off-site logistics · Step up our Safe Transportation Code of Conduct as a Shipped Goods Owner	· We continued to revise our yellow card system and yellow cards for containers (labels) · We evaluated and analyzed transportation safety levels and instituted improvements	A	31
Occupational Safety and health	Reduce occupational accidents	· Reduce occupational accidents through education and safety management systems · Attain zero accidents requiring employees to take time off	Conduct risk assessments and identify and eliminate unsafe work practices	All business sites conducted risk assessments and identified and addressed unsafe work practices. Note: Numbers in parentheses are for fiscal 2007 Number of accidents in Group: 4 (3); accident frequency of 0.800 (0.595) Number of accidents among subcontractors: 1 (3), accident frequency of 0.130 (0.669)	B	22 23
	Manage employee health	Undertake activities to maintain and improve health	Maintain and improve health	We continued to focus on mental health and metabolic syndrome (through education and a follow-up structure)	A	
Disaster prevention	Eliminate major accidents	Eliminate major accidents, notably explosions, fires and large leaks of chemical substances, and improve production stability (in keeping with the characteristics of specific plants, target more stable operating conditions, enhancing operational techniques and facilities)	Eliminate major accidents, notably explosions, fires, and large leaks of chemical substances	· There were no major accidents · The number of problems impeding operations rose from 8 to 13 · We analyzed previous accidents and implemented measures to prevent recurrences, and stepped up preliminary safety assessments and change management	A	22
Community relations	Maintain community trust	Target ongoing corporate activities that secure and maintain community trust	Continue to engage communities and build trust	· We addressed complaints about noise and odors by setting up response desks at each business site, deploying countermeasures and responding faithfully to problems to obtain understanding · We hosted business site tours and held children's chemistry classes, engaged in community dialogue and participated voluntarily in social activities to maintain community trust	A	18 19

# 1 Addressing Global Warming

**We established the Environmental Burdens Reduction Promoting Department, and are striving to lower our carbon dioxide emissions.**

## 1 Roles and Activities of the Earth Committee and the Environmental Burdens Reduction Promoting Department

The Fourth Assessment Report of the Inter-governmental Panel on Climate Change concluded that increases in greenhouse gas concentrations very likely caused higher global temperatures from the mid-20th century. This observation prompted the public and private sectors to begin collaborating in efforts to reduce greenhouse gas emissions.

We are acting in line with the voluntary action plan of Nippon Keidanren and the reduction targets of the Japan Chemical Industry Association (see note 1 below) and the Japan Cement Association (see note 2) to cut emissions of carbon dioxide, the prime greenhouse gas. Our transportation operations and sales, production and other businesses have undertaken reduction efforts in line with the Japanese government's amended Law Concerning the Rational Use of Energy.

In July 2008, we established the Earth Committee, largely comprising representatives from the head office management sector to oversee these endeavors. In October that year, we set up the Environmental Burdens Reduction Promoting Department, as the committee's secretariat in October 2008.

The committee manages our ongoing initiatives to conserve energy and implements the following programs to fulfill the goals of the Japan's government's pilot emissions trading scheme and reduce carbon dioxide emissions from energy sources in line with the Law Concerning the Rational Use of Energy.

### Notes

1. The Japan Chemical Industry Association targets a 20% reduction in energy consumption intensity from 1990 levels (on crude oil equivalent basis).
2. The Japan Cement Association targets a 3.8% decrease in energy intensity from 1990 levels (on a calorie basis).

## Carbon Dioxide Reduction Goals

Production	Cut carbon dioxide emissions intensity to 1.14t/t of production by fiscal 2010 (see note below), or 22.9% lower than fiscal 1990 levels Note: Carbon dioxide emissions intensity for manufacturing all products based on conversion into carbide output from Omi Plant. The target is a total for chemicals and cement operations (using Nippon Keidanren's energy conversion index)
Transportation	We aim to reduce average energy consumption intensity at least 1% annually in keeping with the Law Concerning the Rational Use of Energy (see page 31 for details)
Branches, sales units, research facilities, cement service stations and other businesses	In line with the Law Concerning the Rational Use of Energy, we will assess our energy use in fiscal 2009 and strive from fiscal 2010 to reduce average energy consumption intensity at least 1% annually

## Efforts to Lower Carbon Dioxide Emissions

Our production units are upgrading to facilities that are highly energy-efficient while switching from heavy fuel oil for in-house power generation to natural gas, for which carbon dioxide emissions are far lower. In keeping with the following basic policies, we will keep reducing carbon dioxide emissions at manufacturing stages while supplying customers with products whose emissions are lower, thereby helping to alleviate global warming.

- Reduce carbon dioxide emissions from initial raw materials and production processes to final shipment
- Develop and supply products that reduce house refuse and thus generate less carbon dioxide

We have undertaken the following Companywide initiatives to reach our policy goals.

1. We identified energy conservation issues from the current productivity improvement efforts of each business site to establish targets through fiscal 2010, evaluating progress semiannually.
2. We will employ life cycle assessment techniques to quantify carbon dioxide emissions from materials procurement through manufacture for all major products by the end of

emissions and drive reductions from households, whose emissions continue to rise.

We aim to help build a sustainable society by creating products that benefit the environment by generating less carbon dioxide from manufacturing and their consumption.



Kotaro Takada  
Manager of Environmental Burdens Reduction Promoting Department

fiscal 2009. This effort will help us to develop more environmentally friendly offerings while lowering the ecological impact of existing products.

All branches, sales units, research facilities and cement service stations are working to lower energy consumption intensity 1% annually in keeping with the Law Concerning the Rational Use of Energy.

Efforts to solidify employee awareness of saving energy include wearing work apparel that requires less air-conditioning in summer or heating in winter.

## Carbon Dioxide Emissions

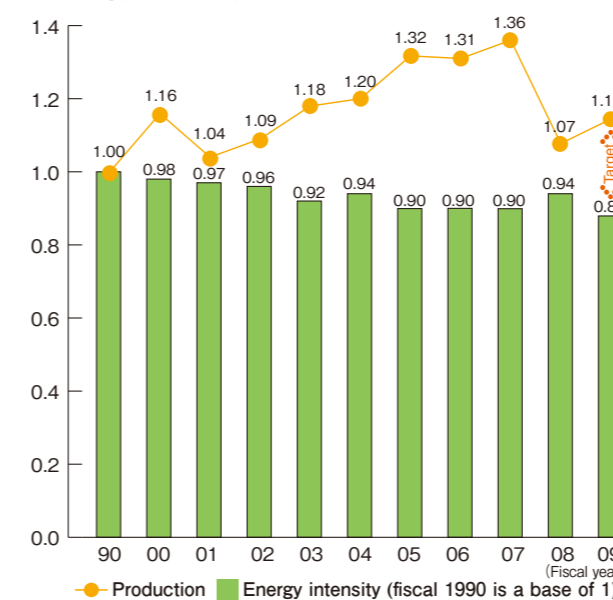
In fiscal 2008, our carbon dioxide emissions derived from energy fell 270,000 metric tons, to 1.44 million metric tons,

reflecting a production plunge from fall 2008. Emissions from other sources were down 170,000 metric tons, to 1.24 million metric tons.

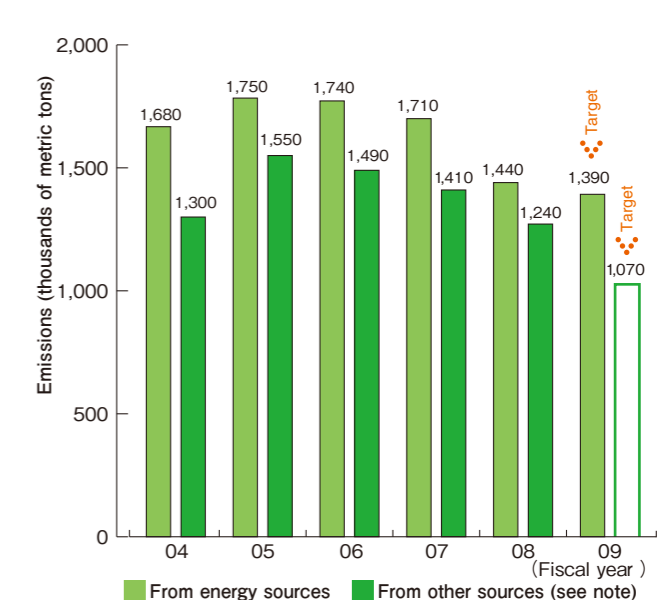
Our energy intensity deteriorated because of lower production.

We registered under the Japan's government's pilot emissions trading scheme in December 2008, so for this report we calculated energy intensity and carbon dioxide emissions based on the coefficients standards of the voluntary action plan of Nippon Keidanren, recalculating figures for previous reports, which we had based on the coefficients of the amended Law Concerning the Rational Use of Energy.

### Energy Intensity Since Fiscal 1990



### Carbon Dioxide Emissions



Note: Energy from other sources is that generated in processing raw materials during manufacturing or treating waste.

## The Earth Committee

We established this committee in July 2008 to support Companywide efforts to reduce carbon dioxide emissions. The vice president chairs this body, which comprises the six subcommittees below.

The Information Subcommittee is now called Environmental Burdens Reduction Department.

- |  |  |
|--|--|
| <b>Production Process Subcommittee</b>       | Evaluates using the Engineering Department and the Production Process Department to help resolve business site issues                |
| <b>Procurement Subcommittee</b>              | Encourages business units to purchase and use high-efficiency equipment  |
| <b>Logistics Processes Subcommittee</b>      | Systematically tackles logistics issues, through such means as the cultivation of human resources                                    |
| <b>Research and Development Subcommittee</b> | Calculates and discloses carbon dioxide emission cuts from products<br>Drives the development of lower-carbon products and processes |
| <b>Office Subcommittee</b>                   | Drives carbon dioxide reductions from offices and sales activities   |
| <b>Information Subcommittee</b>              | Presents initiatives through the in-house newsletter, <i>DENKA 100 News</i> , and other tools  |

## REPORT Taking a Balanced Approach to the Environment

One upshot of worldwide efforts to combat global warming has been to try to suppress carbon dioxide emissions by pricing them. But going too fast down that track could raise costs across the board, greatly harming lifestyles.

We and other manufacturers need to avoid such a fate by taking steps to lower their carbon dioxide

## 2 Electric Power Initiatives

We are harnessing hydropower, natural gas, waste heat from production processes and other clean energy sources.

### 1 Hydroelectric Generation

We own and operate 10 hydroelectric power plants along the Himekawa River in Niigata Prefecture. We jointly own another five facilities in the area with the Hokuriku Power Company. The total generating capacity of these facilities is 110,000 kilowatts(kW).

Together they supply 32% of our electricity, equivalent to 140,000 kiloliters(kℓ) of crude oil. Our clean hydro-power operations significantly lower our greenhouse gas emissions.

We are proceeding to replace a water turbine and upgrade other equipment as part of efforts to dramatically increase the efficiency and output of that facility.



- 1 Omigawa Power Plant (3,300 kW)
- 2 Kotakigawa Power Plant (4,200 kW)
- 3 Oami Power Plant (25,100 kW)
- 4 Otokorogawa Power Plant (8,400 kW)
- 5 Yokokawa Power Plant No. 1 (10,000 kW)
- 6 Yokokawa Power Plant No. 2 (16,000 kW)
- 7 Umigawa Power Plant No. 1 (3,800 kW)
- 8 Umigawa Power Plant No. 2 (4,400 kW)
- 9 Umigawa Power Plant No. 3 (2,600 kW)
- 10 Umigawa Power Plant No. 4 (900 kW)
- 11 Himekawa Power Plant No. 6 (jointly owned; 26,000 kW)
- 12 Takigami Power Plant (jointly owned; 15,000 kW)
- 13 Nagatsuga Power Plant (jointly owned; 5,000 kW)
- 14 Sasakura Power Plant No. 2 (jointly owned; 10,200 kW)
- 15 Kita-otari Power Plant (jointly owned; 10,500 kW)



Oami Power Plant

### 2 Power Source Composition

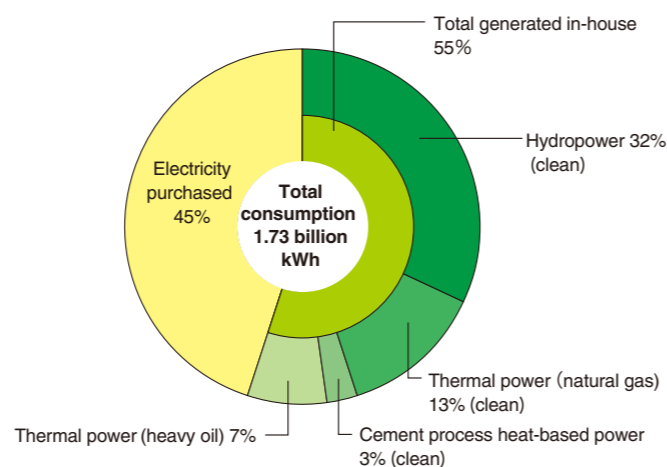
We use four types of power source. We operate a hydroelectric power plant, two thermal power plants and one facility that generates electricity from cement heat (see note 1 below), and we also purchase power. We consumed 1.73 billion kWh of electricity in fiscal 2008. The chart below presents the composition. Clean hydropower, natural gas and exhaust heat-based generation sources accounted for around 48% of the total.

We plan to use more natural gas at our thermal power plants and upgrade our gas cogeneration facilities (see note 2), thereby raising our clean energy usage.

#### Notes

- 1. These power systems recover waste heat from cement production processes to generate electricity.
- 2. Gas turbine with heat recovery steam generation.

### Power Sources in Fiscal 2008



Tomi Gas Turbine at Omi Plant

## 3 Rationalizing Logistics

We are pressing ahead with modal shifts, the increase of transportation efficiency and other initiatives to reduce carbon dioxide emissions.

### 1 Complying with Legislation

In April 2006, we became a designated emitter under the amended Law Concerning the Rational Use of Energy. We responded by forming the Logistics Rationalization Project Team within the Earth Committee's Logistics Process Subcommittee to drive ongoing Companywide efforts to boost transportation efficiency, improve logistics quality and save energy to cut our carbon dioxide emissions intensity at least 1% annually.

For example, we reviewed logistics within our plants from a manufacturer's perspective, deployed new cement tankers to streamline transportation of cement and fly ash and upgraded our fly ash silos. We made modal shifts, using 20 t trailers for roll-on, roll-off ships and box vessels. We used local ports to receive and transport container cargo.

In fiscal 2008, our carbon dioxide emissions from logistics were 48,300t from 831 million t-km of cargo shipped. We lowered our energy consumption intensity (amount converted into crude oil equivalents and divided by cargo volume) by 1.2% from fiscal 2006 levels.

We will review our logistics processes, including for



Loading at the chloroprene facility of Omi Plant

plant warehouses and operations management, as part of ongoing efforts to conserve energy.

### 2 Modal Shifts

In fiscal 2006, we began focusing on modal shifts for transporting large cargo lots over long distances. We switched from trucks to ferries and roll-on, roll-off vessels for the Chiba Plant's shipments to the west of the Kansai region and for the Omuta Plant's shipments to the Kanto region. We thereby reduced carbon dioxide emissions by 158t in fiscal 2008.

### Progress in Modal Shifts from Truck to Ship Transportation

	Fiscal 2007	Fiscal 2008
Cargo subject to modal shifts (1000t-km)	2,830	3,175
Carbon dioxide emission reductions (t)	112	158



Loading AZUMIN fertilizer and special cement additives from Omi Plant at Port Himekawa into box vessel bound for Kyushu

### REPORT | Optimizing Logistics Flows to Conserve Energy

Yasuhiro Saito  
Leader of the Logistics Rationalization Project Team

We constantly pursue ways to optimize the flow of goods from the fundamental stance of a manufacturer's perspective. We endeavor to address dramatic swings in the global economy and in raw materials prices, which we accommodate through changes in goods destinations, products, amounts and delivery terms.

We make numerous preparations based on diverse simulations to ensure that logistics quality

translates into better customer satisfaction and lower costs.

We are expanding our use of nearby ports for container-based exports, as part of which we are building large constant-temperature automated warehouses in line with DENKA's efforts to boost capacity to become the world's top producer of chloroprene rubber.





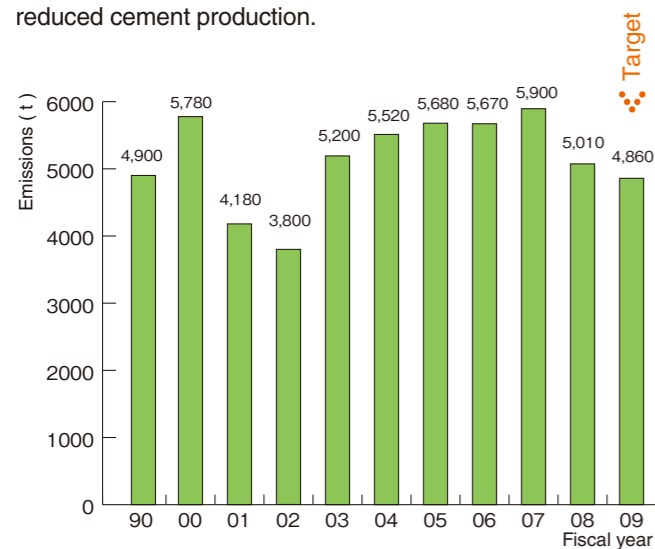
# 4 Outputs

We are suppressing and properly treating substances and wastes resulting from our production activities.

## Emissions

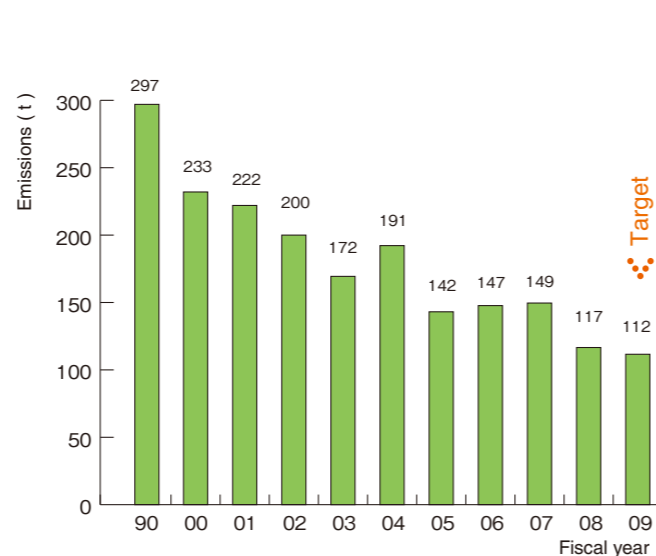
### Nitrogen Oxide (NOx)

In fiscal 2008, these emissions declined around 15% because we scaled back operations at the Chiba Plant and reduced cement production.



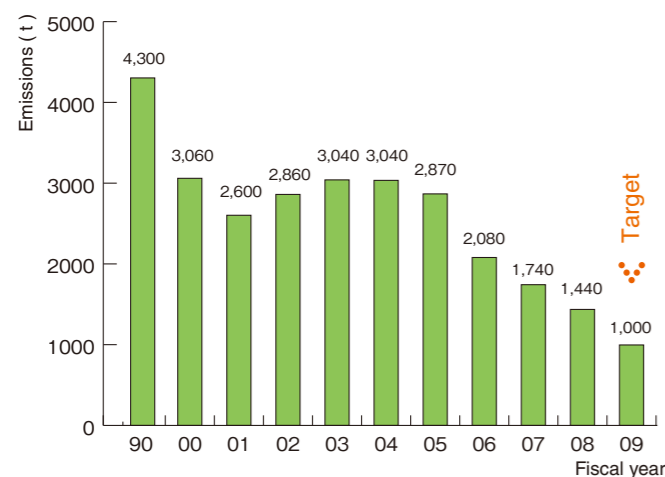
### Soot and Dust

Emissions dropped about 21% because we used more natural gas at the Omi Plant and lowered cement production.



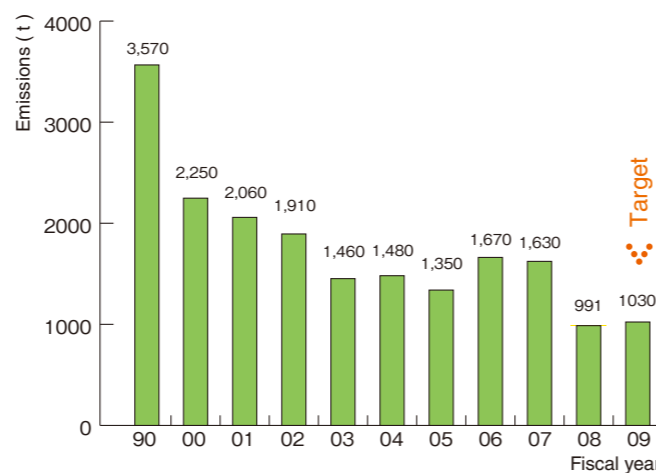
### Sulfur Oxide (SOx)

We cut these emissions about 18% by switching from heavy oil to natural gas. We are exerting ourselves to reduce further in fiscal 2009.



### Chemical and Biochemical Oxygen Demand(COD·BOD)

During the year, we increased water treatment facility capacity at the Omi Plant and lowered production in the second half, causing emissions to drop around 40%.

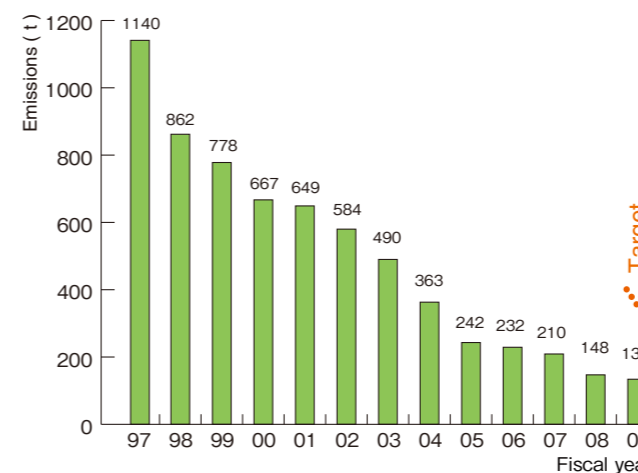


## PRTR Substances Emissions

We have made significant progress in reducing emissions of PRTR(Pollutant Release and Transfer Register) substances by analyzing the causes of such emissions, exploring effective solutions and modifying our facilities.

In fiscal 2008, emissions of substances on the register dropped about 25%, reflecting facility modifications, operational improvements and lower production.

For fiscal 2009, we aim to reduce emissions another 9% or so, largely by changing solvents containing toluene at the Chiba Plant.



## Fiscal 2008 Substance Emissions and Transfers

The following table shows substance emissions and transfers under the register that exceeded 1t.

PRTR substances	Emissions					Amount transferred
	Air	Water	Soil	Landfill	Total	
Zinc	0	0	0	0	0	2
Ethyl acrylate	1	0	0	0	1	0
Acrylonitrile	5	0	0	0	5	12
Acetaldehyde	3	5	0	0	8	0
Aniline	0	0	0	0	0	4
Ethyl benzene	5	0	0	0	5	58
Ethylene glycol	0	6	0	0	6	5
Xylene	0	0	0	0	0	1
Vinyl chloride	5	0	0	0	5	0
Cobalt and chemical compounds	0	0	0	2	2	0
Vinyl acetate	21	0	0	0	21	0
Dimethyl formamide	0	0	0	0	0	17
Styrene	22	0	0	0	22	135
Water soluble copper salt	0	3	0	0	3	8
Toluene	59	0	0	0	59	30
Carbon disulfide	0	1	0	0	1	0
Bis(2-ethylhexyl)phthalate	0	0	0	0	0	2
Hydrogen fluoride	1	0	0	0	1	19
Boron and boron compounds	0	7	0	0	7	13
2-ethylhexyl methacrylate	0	0	0	0	0	2
Methyl methacrylate	2	0	0	0	2	19
Total	124	22	0	2	148	327
Dioxins (mg-TEQ) (see note)	183	25	0	0	208	0

Units: t (excluding dioxins)  
Note: Toxic Equivalents

## Wastes

### Final Disposal

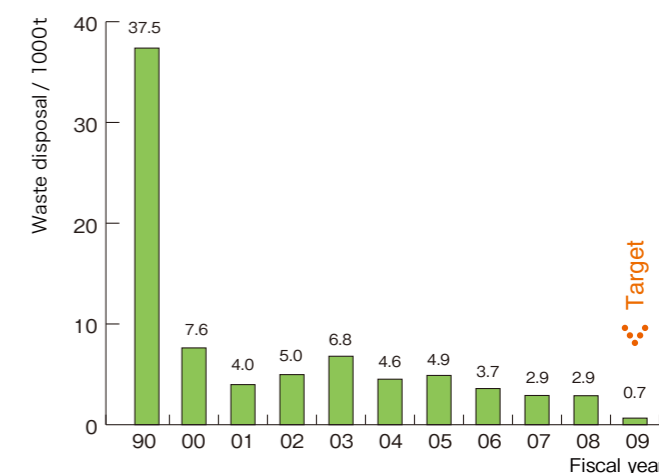
This was unchanged in fiscal 2008. We were able to reduce final disposal by properly recycling soot and dust from the Omuta plant, although there was an increase in external disposal from the Omi Plant because recycling capacity was insufficient.

The Companywide emissions rate remained at 2.66%.

In fiscal 2009, we will improve waste unit emission and boost internal recycling rates, and reach the target of zero emissions.

### Our definition of zero emissions

$$\left[ \frac{\text{Final waste disposal}}{\text{Total wastes generated}} \times 100 < 1 \right]$$



Soot and dust recycling facility at Omuta Plant

## 5 Environmental Accounting

In fiscal 2006, we began accounting for our investments, spending and environmental and economic effects to assess the impact of our conservation investments.

### 1 Conservation Costs

In fiscal 2008, initiatives to save energy accounted for 51% of environmental investments, with research and development spending to conserve resources representing another 32%.

Coverage: Plants and Research Institutes

Category	Details	Conservation costs (millions of yen)	
		Investments	Expenses
1. Business site costs		1,640	2,330
(1) Pollution prevention	Environmental burden reduction measures	286	1,460
(2) Conservation	Conserving energy	1,230	23
(3) Recycling resources	Using resources effectively	125	846
2. Upstream and downstream costs	Changing raw materials	0	0
3. Administrative costs	Environmental education	0	5
4. R&D costs	Conserving resources	781	1,530
5. Social activity costs	Community relations	0	5
6. Environmental damage costs		0	177
7. Others		0	0
<b>Total</b>		<b>2,420</b>	<b>4,050</b>

### 2 Conservation Effects

We calculated the environmental load data.

Environmental load	Units	Fiscal 2007 results	Fiscal 2008 results	Effects
Carbon dioxide emissions (from energy sources)	1000 t	3,110	2,680	430
PRTR substance emissions	t	210	148	62
NOx emissions	t	5,900	5,010	890
SOx emissions	t	1,740	1,440	300
Soot and dust emissions	t	149	117	31
Water used	1000m <sup>3</sup>	83,200	81,600	1,600
COD • BOD discharges	t	1,630	991	639
Waste	1000 t	112	109	3
Final waste disposal	t	2,930	2,900	30
Carbon dioxide emissions from transportation	1000 t	48	48	0

### 3 Economic Effects

We calculated proceeds from selling wastes, energy savings, reductions in waste treatment costs and yield improvements.

Category	Item	Details	Effects (millions of yen)
<b>Profits</b>	Proceeds from selling waste from core operations and income from recycling wastes	Sales profits	565
<b>Cost reductions</b>	Lowering energy costs by conserving energy	Conserving energy	239
	Reducing waste treatment costs by conserving or recycling resources	Using resources effectively	(28)
	Improved yields		170
<b>Total</b>			<b>945</b>

## 6 Environmental Performance

We disclose performance data for environmental activities at six plants.

### Environmental Performance Data

Plants	Item	Units	Fiscal 2006	Fiscal 2007	Fiscal 2008	Fiscal 2009 targets	
Omi Plant	Energy consumption indicator unit	Compared with fiscal 1990	0.91	0.95	0.95	0.92	
	Carbon dioxide emissions (from energy sources)	1000t	1,060	1,040	930	810	
	PRTR substance emissions	t	36	43	17	11	
	NOx emissions	t	4,030	4,220	3,870	3,440	
	SOx emissions	t	1,730	1,510	1,340	900	
	Soot and dust emissions	t	128	137	108	104	
	Water used	1000m <sup>3</sup>	71,710	69,100	66,800		
	COD • BOD discharges	t	1,590	1,600	964	1,000	
	Waste	t	89,600	79,900	82,800	74,600	
	Final waste disposal	t	1,190	1,470	2,330	330	
	Omuta Plant	Energy consumption indicator unit	Compared with fiscal 1990	0.95	0.91	0.92	0.90
		Carbon dioxide emissions (from energy sources)	1000t	110	120	110	100
PRTR substance emissions		t	6	8	6	6	
NOx emissions		t	1,140	1,160	770	1,000	
SOx emissions		t	1	2	1	1	
Soot and dust emissions		t	5	4	5	4	
Water used		1000m <sup>3</sup>	1,200	1,300	1,308		
COD • BOD discharges		t	1	1	1	1	
Waste		t	7,020	8,980	9,770	8,490	
Final waste disposal		t	2,180	1,190	420	200	
Chiba Plant		Energy consumption indicator unit	Compared with fiscal 1990	0.89	0.85	0.93	0.87
		Carbon dioxide emissions (from energy sources)	1000t	530	510	370	440
	PRTR substance emissions	t	181	153	120	114	
	NOx emissions	t	485	508	355	411	
	SOx emissions	t	326	209	76	72	
	Soot and dust emissions	t	14	8	3	3	
	Water used	1000m <sup>3</sup>	9,860	9,730	9,690		
	COD • BOD discharges	t	68	24	22	22	
	Waste	t	23,100	22,000	15,400	18,100	
	Final waste disposal	t	206	211	124	95	
	Shibukawa Plant	Energy consumption indicator unit	Compared with fiscal 1990	1.16	1.00	1.08	0.95
		Carbon dioxide emissions (from energy sources)	1000t	10	10	10	10
PRTR substance emissions		t	6	5	4	5	
NOx emissions		t	10	9	8	14	
SOx emissions		t	27	25	23	24	
Soot and dust emissions		t	1	1	1	1	
Water used		1000m <sup>3</sup>	3,920	2,700	3,430		
COD • BOD discharges		t	9	3	4	4	
Waste		t	474	552	453	366	
Final waste disposal		t	19	13	6	4	
Ofuna Plant		Energy consumption indicator unit	Compared with fiscal 2002	0.86	0.81	0.80	0.77
		Carbon dioxide emissions (from energy sources)	1000t	10	10	10	10
	PRTR substance emissions	t	1	1	1	1	
	NOx emissions	t	3	4	2	2	
	SOx emissions	t	0	0	0	0	
	Soot and dust emissions	t	0	0	0	0	
	Water used	1000m <sup>3</sup>	67	71	70		
	COD • BOD discharges	t	0	0	0	0	
	Waste	t	200	194	211	211	
	Final waste disposal	t	13	13	22	22	
	Isesaki Plant	Energy consumption indicator unit	Compared with fiscal 2005	0.99	0.99	1.02	0.94
		Carbon dioxide emissions (from energy sources)	1000t	10	10	20	20
PRTR substance emissions		t	0	0	0	0	
NOx emissions		t	0	0	0	0	
SOx emissions		t	0	0	0	0	
Soot and dust emissions		t	0	0	0	0	
Water used		1000m <sup>3</sup>	-	320	326		
COD • BOD discharges		t	0	0	0	0	
Waste		t	275	211	172	165	
Final waste disposal		t	59	28	0	0	

Note: Totals of individual figures in this and other tables may not be exact because we rounded down fractions. The totals for this table match the figures in the Inputs and Outputs section on page 26.

We registered under the Japan government's pilot emissions trading scheme in December 2008, so for this report we calculated energy intensity and carbon dioxide emissions based on the coefficients standards of the voluntary action plan of Nippon Keidanren, recalculating figures for previous reports, which we had based on the coefficients of the amended Law Concerning the Rational Use of Energy.

# 1 Investor Relations

## 1 For institutional investors

We held a full-year results orientation in May 2008 and an interim one in November for analysts, fund managers and other institutional investors. We overviewed our operations and highlighted key businesses. We also arranged individual orientations and small meetings and held plant tours.

## 2 For individual investors

We held many orientations around Japan, including in Niigata, Sendai and Osaka, to present our history, results and business sites and outline each operation. Many attendees shared their views and gained a better understanding of DENKA.

## 3 Other Investor Relations Initiatives

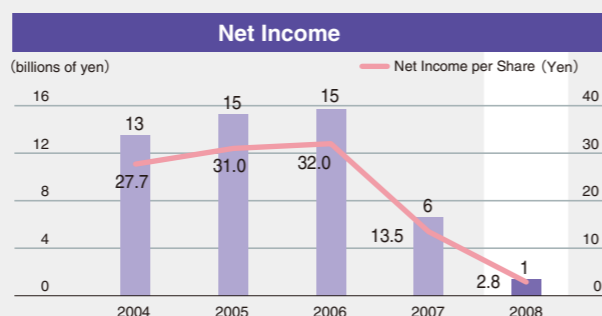
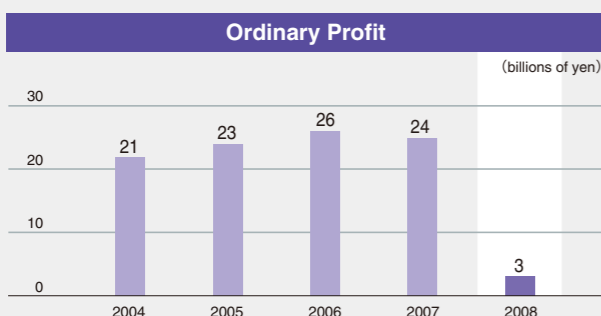
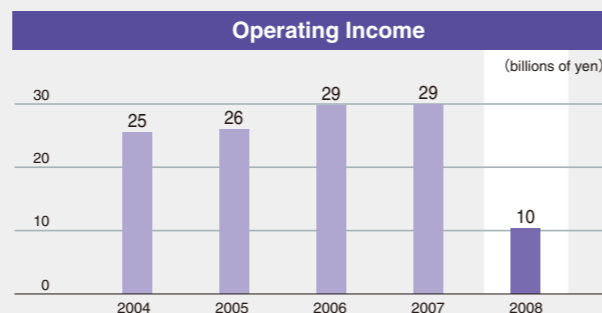
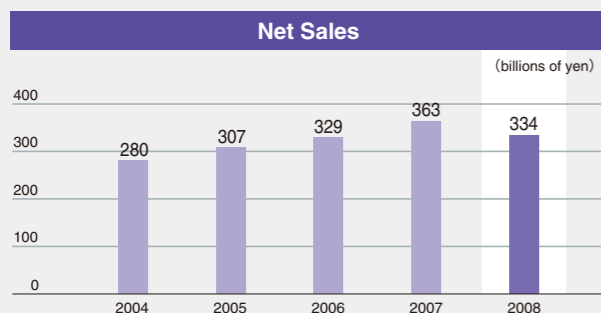
We are endeavoring to enhance our investor relations program, as part of which we regularly update our Japanese Web site for shareholders. We will keep striving to maximize awareness of the Company and proactively disseminate fair and timely information.

Since 2008, the CSR report has also fulfilled the function of the Annual Report. Therefore, this report contains selected financial data. Furthermore, the English version of the CSR Report is disclosed on our Website.

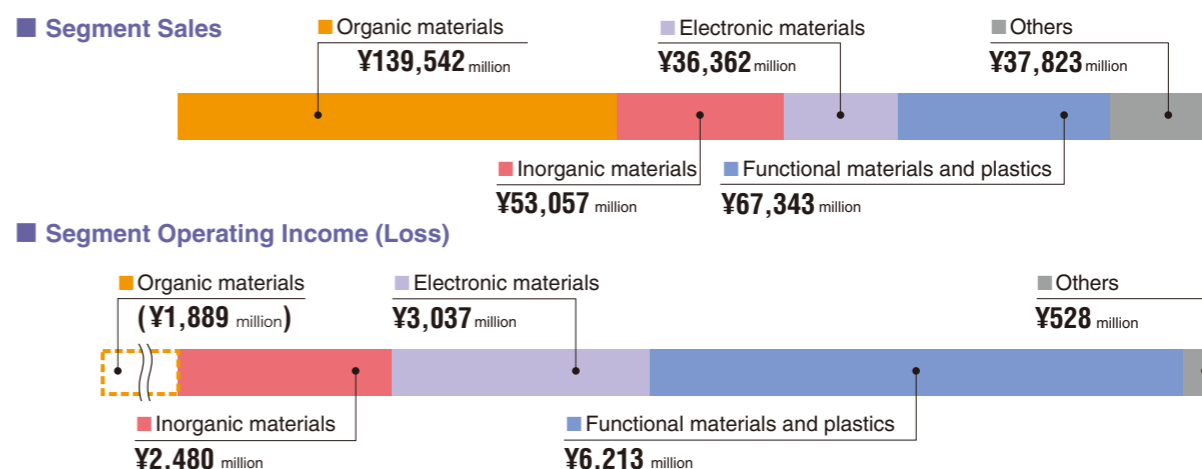
# 2 Consolidated Financial Highlights

(Millions of yen)

	Fiscal 2004	Fiscal 2005	Fiscal 2006	Fiscal 2007	Fiscal 2008
Net sales	280,033	307,923	329,262	363,996	<b>334,130</b>
Operating income	25,585	26,069	29,877	29,912	<b>10,302</b>
Ordinary profit	21,897	23,913	26,006	24,918	<b>3,094</b>
Net income	13,587	15,365	15,734	6,660	<b>1,439</b>
Total assets	328,248	349,689	365,301	375,364	<b>377,912</b>
Total net assets	130,715	146,148	164,643	161,870	<b>150,142</b>
Shareholders' equity ratio (%)	39.8	41.8	43.5	41.6	<b>39.1</b>
Net income per share (yen)	27.70	31.08	32.03	13.57	<b>2.89</b>
Shareholder's equity per share (yen)	265.71	297.23	323.81	317.91	<b>300.60</b>



# 3 Segment Performance of Fiscal 2008



**41.8% Organic Materials**  
Including raw materials for synthetic resin, synthetic resin, acetic chemical products and synthetic rubber

Domestic and overseas demand plunged for styrene monomer, acrylonitrile butadiene styrene resins and other styrene-based offerings, as well as for transparent polymers and CLEAREN. Compounding this situation, a higher yen and softer market conditions caused profitability to deteriorate, while exports declined. These factors caused decreases in volumes and sales. Subsidiary



CLEAREN film for PET bottle labels

Denka Singapore's sales volumes of polystyrene resin were down. Unit sales of chloroprene rubber dropped because of plummeting demand in the second half of the year for automotive and adhesive applications, and sales of these products decreased owing to a higher yen. As a result of these factors, segment sales fell ¥43,507 million, or 23.8%, to ¥139,542 million.



Chloroprene rubber used in wetsuits

Chloroprene rubber ships

**15.9% Inorganic Materials**  
Fertilizer and inorganic chemical products, cement and special cement additives

Sales of fertilizers rose because of volume gains in calcium cyanamide owing to declines in imports of competing offerings and because of price adjustments in response to high raw materials costs. Volumes of alumina cement and other refractories for steel materials fell due to plunging second-half demand, although price adjustments boosted sales. Cement sales were unchanged, as

revised prices offset lower volumes from slower public investment and private-sector demand. The market for special cement additives remained generally adverse. Segment sales increased ¥4,023 million, or 8.2%, to ¥53,057 million.



Calcium cyanamide fertilizer



Our cement accepts and recycles wastes and other materials



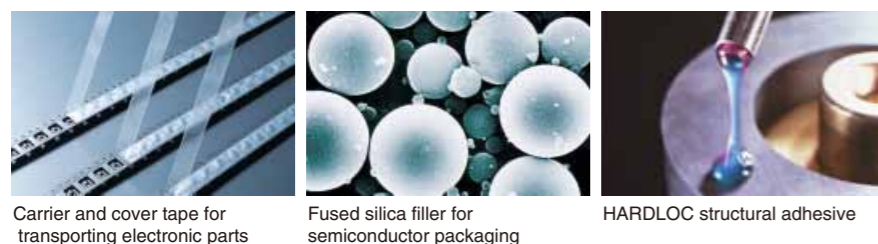
Bridge employing our nonshrink grouting material

**10.9%** **Electronic Materials**  
Electronic components, electronic packaging materials and functional ceramics

Volumes and sales rose for electronic circuit substrates for electric trains and environmental applications.

In contrast, volumes and sales were down for such functional ceramics as spherical fused filler used in semiconductor sealants and for electronic packaging materials, including Thermo sheet EC for embossed carrier tapes to transport semiconductors, reflecting major inventory adjustments in the semiconductor and related industries.

Spherical fused filler volumes were down at Singaporean subsidiary Denka Advantech Pte., Ltd. Denal Silane's sales of monosilane gas declined because of lower demand for liquid crystal displays and semiconductors. Volumes for HARDLOC structural adhesive also decreased, reflecting reduced demand for electronic component applications. Segment sales therefore dropped ¥4,297 million, or 10.6%, to ¥36,362 million.



Carrier and cover tape for transporting electronic parts    Fused silica filler for semiconductor packaging    HARDLOC structural adhesive

**20.2%** **Functional Materials and Plastics**  
Packaging, construction, and industrial materials, and medical and pharmaceutical products

Volumes and sales were solid for plastic rain gutters and corrugated pipes used in agriculture and engineering.

Shipment volumes rose for TOYOKALON synthetic fiber for wigs, reflecting demand growth in North America and Africa, but sales declined because the higher yen caused prices to fall. Volumes and sales improved for weather-resistant DX Film, a polyvinylidene fluoride film.

Sales of food packaging sheet were up, partly because of

synergies from a merger with Clear Tech Sheet Co., Ltd. Subsidiary DENKA Polymer performed well with its plastic products, partly because it revised its prices.

In pharmaceuticals, volumes and sales grew steadily for a high-molecular hyaluronan that improves joint functions. Denka Seiken boosted influenza vaccine volumes and generated solid sales of diagnostic reagents. Sales for this segment thus advanced ¥6,810 million, or 11.3%, to ¥67,343 million.

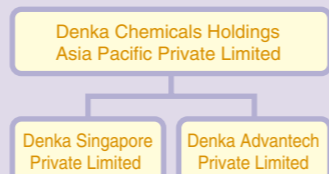


TOYOKALON synthetic fiber for wigs    DX Film for solar cell materials    SUVENYL® preparation for improving joint functions

**Holding Company Established in Singapore**

One key management priority is to boost overseas revenues to at least 50% of net sales, from just over 30% currently. We have established business units in such locations as Shanghai, Hong Kong and Taiwan. We are now focusing on the South and Southeast Asian markets, which encompass the fast-growing Indian Thai and Vietnamese economies. This consideration led us to establish the wholly owned Denka Chemicals Holdings Asia Pacific Private Limited on April 16, 2009.

We started making and selling acetylene black, styrene resins and fused silica in Singapore through two subsidiaries in the 1980s. The new subsidiary now oversees those businesses. We plan to place other subsidiaries in neighboring markets under the new holding company to streamline the efficiency of our regional operations.



**4 Research and Development Activities**

We reinforce our existing offerings with proprietary technologies while cultivating promising peripheral technologies to develop highly functional products. A key priority is to rapidly meet market demands. In fiscal 2008, we allocated ¥10,285 million to R&D operations, which employed 633 researchers. During the year, we had 221 outstanding applications in Japan and registered 282 patents (including for utility models) domestically.

**1 Organic Materials**

We are reinforcing production technologies, improving quality and developing new styrene-based functional resins, including transparent and heat resistant resins and shrink materials. A Singaporean subsidiary has increased production capacity, contributing to sales.

We are bolstering our production technologies in chloroprene, ER rubber, acetylene black and other organic chemical areas to expand our operations in Japan and abroad. In chloroprene rubber, we are developing new processes and grades based on facilities upgrade plans to enhance our competitive edge.

**2 Inorganic Materials**

In special cement additives, we are developing new product lines and proposing new technologies to differentiate ourselves and satisfy private-sector demand. We are cultivating construction applications for our expansion materials. New product development focuses on the maintenance and repair market and ultra-high strength, high-durability concrete products, notably fiber-reinforced concrete.

In fertilizers and inorganic products, we are concentrating R&D on following up on production technologies for alumina fibers and new automotive applications. We are also pursuing R&D to strengthen our calcium-aluminate cement, fertilizer and other operations.

**3 Electronic Materials**

In electronic components, we are developing new offerings to augment our thermal conductivity substrates and thermal materials offerings for the promising LED market while pushing ahead with research to boost the competitiveness of our thermal components for power electronics. We are also

investing heavily in facilities for the products we develop. We are developing specialty functional adhesives and cultivating markets that harness our ultraviolet light-curing technology, a good example being temporary bonding adhesives for electronic parts.

In electronic packaging, we have focused development on matching market requirements, particularly for tapes for transporting electronic components and adhesive tapes for protecting and fastening semiconductor wafers. These efforts have helped us to expand our business.

In functional ceramics, we have pursued higher performance in spherical fused silica for semiconductor sealants while developing nanofillers and other functional fine particles, including spherical alumina for thermal materials and semiconductor sealants. We are also working on boron nitride products for semiconductor manufacturing processes.

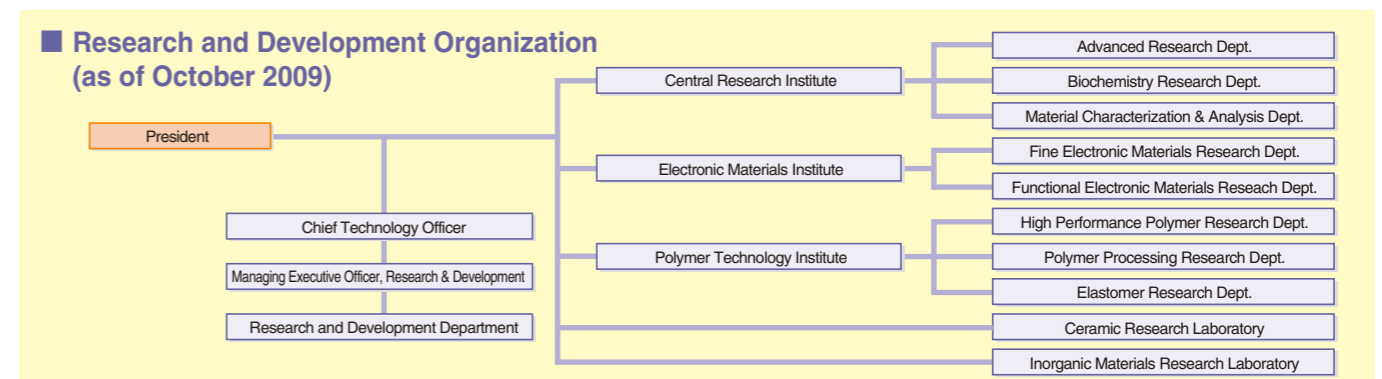
**4 Functional Materials and Plastics**

In polymer processing products for packaging, construction and industrial materials, we are developing weather-resistant films for solar cells and synthetic fibers. We are taking advantage of our capabilities in film and sheet, profile extrusion and adhesive coating technologies to join hands with Group companies and drive expansion.

R&D in pharmaceutical products aims to expand our market share in fermented high molecular hyaluronan, which improves joint function, and to create new applications that take advantage of the properties of hyaluronan. Denka Seiken is developing safe and effective vaccines while developing bacteriological diagnostic reagents to detect infectious diseases that threaten societies, as well as the virus, clinical chemistry diagnostic reagents and immunochemistry diagnostic reagents that are vital for health management.

**5 Other Businesses**

Denka Engineering Co., Ltd., designs and installs industrial equipment. Its R&D is focusing on more efficient pneumatic transfer equipment for powders and waste water treatment facilities.



Note: The Chief Technology Officer and the Director for Research and Development oversee research policies, resource allocation and other areas for all of the Company's research departments.

## Omi Plant

Site Report 2009

### Profile

**Address** 2209 Omi, Itoigawa, Niigata  
**Telephone** +81-25-562-6105  
**Employees** 849 (at March 31, 2009)  
**Major Products** Inorganic materials: Cement, special cement additives, carbide, lime, calcium cyanamide and ALSEN (alumina fiber)  
 Organic materials: Chloroprene rubber, DENKA POVAL and monosilane  
 Pharmaceuticals: Hyaluronic acid preparation

**Operations** Since our establishment in 1921, we have maintained unique carbide chemical operations that exploit abundant in-house assets. These include Mount Kurohime, with its five billion metric tons of limestone reserves, and 170,000kW of in-house power generating capacity. Our broad product range includes calcium carbide, chloroprene rubber and cement. In recent years, we have diversified into inorganic fine chemicals and pharmaceuticals. We continue to develop our business to meet new and diverse challenges in chemicals.



### CSR Policies

#### General Manager Policies

We aim to create a vibrant workplace.

- < Safety > We will create a cheerful and active workplace that is free of occupational accidents, major security problems and occupational illnesses.
- < Environment > We will pursue lasting trust as an outstanding manufacturer and undertake responsible Care initiatives that all employees are aware about.
- < Quality > We will meet customer quality demands and enhance trust.



**Hitoshi Watanabe**  
Senior Executive Officer  
General Manager of Omi Plant

### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

#### Himekawa Port Comprehensive Emergency Drill

We participated in a joint drill for oil spillage and fire at Himekawa Port. We created a disaster prevention structure for the facility through collaboration with such related institutions as the Niigata Coast Guard Office, the Itoigawa City Fire Department and the Himekawa Port Users' Association.



employees to the police station. The police chief presented us with a shield declaring our commitment to the initiative.

#### Prize for Safety Excellence from Japan Cement Association

The cement department at Omi Plant received this awarded for 150,000 hours without accidents at the 59th Cement Safety and Health Convention.



#### Fiscal 2009 Initiatives

- We aim to secure Occupational Safety and Health Management System (OSHMS) certification for ensuring a safe and secure plant for employees and the community.
- We will reduce environmental impact, notably by cutting waste and maintaining and improving the local area. We will additionally engage more with the community.
- We will combat global warming by switching to low-carbon fuels.
- We will maintain product safety and enhance and stabilize production processes to meet customer needs.

#### Omi River Area Cleanup

A total of 64 employees and representatives of the Transportation Sub-Committee in the Health and Safety Council participated in this effort. The initiative helped improve employee awareness of the need to conserve the environment.

#### Participating in Local Festivals

The employees participated in many local events, including Take No Karakai, which highlighted the folk heritage.

#### Presenting Pledge to Itoigawa Police Station

As part of winter traffic safety initiatives, we created a petition to eradicate drink-driving and submitted the document with the signatures of 1,506

## Omuta Plant

Site Report 2009

### Profile

**Address** Shinkai-Machi 1, Omuta, Fukuoka  
**Telephone** +81-944-52-1055  
**Employees** 467 (at March 31, 2009)  
**Major Products** Inorganic materials: Carbide, calcium cyanamide, FIRELEN, alumina cement (for refractories) and special cement additives  
 Organic materials: DENKA BLACK  
 Electronic materials: Fused silica filler, silicon nitride, boron nitride, aluminum nitride, ceramic electronic circuit substrates and thermally conductive sheets

**Operations** This facility is the oldest of DENKA's plants. It started operations in 1916, one year after the Company's creation, to produce carbide and calcium cyanamide. Since then, the plant has innovated diverse inorganic chemical products based on its proprietary electric furnace, high-temperature control and nitride technologies. In recent years, we entered the fine ceramics and electronic materials fields. We contribute to the development of the electronics, automotive and numerous other industries.



### CSR Policies

#### General Manager Policies

Although prospects are challenging in light of the prolonged recession, we aim to maintain profitability by slashing costs. At the same time, we will address product issues and develop new offerings to prepare for an economic recovery.

#### Environmental, Safety and Quality Policies

- Maintain Safety, Health and Security**  
We will pursue compliance and raise employee awareness to ensure safety, health and security. We will maintain our zero-accident record and create an energetic workplace.
- Continue Pursuing DS09 Targets and Complete KIT09 Objectives**  
We will build a production system that enables us to generate profits in an adverse operating climate. We will address issues and accelerate product development. We will also convert crises into opportunities.
- Improve Customer Satisfaction**  
We will better understand our markets and customer needs and overcome the competition by building customer trust.
- Overhaul Facility to Conserve Energy and Resources**  
We will reduce carbon dioxide emissions from our energy usage by improving exhaust heat recovery and production efficiency. We will constrain waste production and pursue zero emissions.



**Shohei Tamaki**  
Executive Officer  
General Manager of Omuta Plant

### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

#### Assisting Community Center with Cleanups

Since 1994, we have voluntarily participated cleanup efforts with the local community center as part of environment month initiatives in the spring and autumn.

The community and businesses unite in these activities.

We will continue to participate in these initiatives to foster prosperity with the community.

#### Fiscal 2009 Initiatives

##### Holding Plant Tours

As well as participating in community cleanups, the Omuta Daijyayama summer festival and blood donation drives, we aim to conduct plant tours for local residents to deepen their understanding of the facility and what we make.

## Chiba Plant

Site Report 2009

### Profile

**Address** 6, Goi-Minamikaigan, Ichihara City, Chiba  
Bibai Subplant: 1-1 Higashi-Gojo-kita, 10-chome, Bibai City, Hokkaido

**Telephone** +81-436-26-3200

**Employees** 455 (at March 31, 2009)

**Major Products** Organic materials: Styrene monomers, polystyrene, ABS resin, transparent resins, heat resistance resins, CLEAREN styrene-butadiene block copolymer, vinyl acetate monomer and DENKA ER.  
Plastic products: Food packaging, construction materials and vinyl tape

**Operations** This facility is one of Japan's top styrene monomer plants, and is reinforcing such styrene operations as polystyrene and ABS resins. It also manufactures such plastic products as transparent plastic and CLEAREN and such petrochemical offerings as DENKA ER.



### CSR Policies

#### General Manager Policies

We will pursue core initiatives under DENKA100 and make this year the start for strengthening the plant and driving dramatic growth.

1. Maintain safe and stable operations by refining security management technologies. We will enhance employee awareness, knowledge and skills to attain a zero-accident record.
2. We will overhaul our business strategy to create and cultivate products that drive growth.
3. We will enhance technological and workplace capabilities to boost productivity, quality and cost competitiveness.
4. We will foster human resources as our foundation by providing training and passing on technologies.
5. We will fulfill our corporate social responsibilities and strive to reduce environmental impact.



**Shotaro Fujii**  
Executive Officer  
General Manager of Chiba Plant

#### Environmental, Safety and Quality Policies

- < Environment > We will consider the environment in all processes, from product development, manufacturing and distribution to usage, final consumption and disposal. We will build an environmental management system.
- < Safety > We want all plant workers to recognize the importance of maintaining a safe and healthy workplace. We will create a occupational safety and health management system and achieve a zero-accident rate.
- < Quality > We will consistently provide products that satisfy customers and swiftly reflect their needs.

### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

#### 1) Security and Disaster Prevention

- We collaborated with the Ichihara-city Fire Department and the Goi Joint Disaster Prevention Council in a disaster drill for the area of Ichihara-city Special Disaster-Prevention District in Petroleum Industrial Complexes and other Petroleum Facilities to which 55 local companies belong.
- We participated in an early fire extinguishing competition with equipment from the Ichihara Fire Prevention Association, with female employees winning in their category.
- We arranged a lecture on forecasting earthquake damage for hazardous equipment by the Institute for Fire Safety & Disaster Preparedness. The lecture covered ideas on the possible extent of disasters based on prevention assessments for industrial complexes in line with the guidelines of the Fire and Disaster Management Agency.

#### 2) Occupational Safety

- We completed a switch to the fiscal 2007 version of OHSAS18001. We are undertaking efficient safety activities through our system.
- We promoted worker health and communications and arranged mental health lecture presentations by industrial physicians.

#### 3) Community Engagement

- We participated as a corporate panelist in a community convention on the risks of chemical substances at Eco Fair Ichihara in environment month.

- During that month, we conducted a plant tour for local elementary school students, presenting our environmental initiatives and showing our production facilities. We helped clean up the median strip on National Route 16 in front of the plant.

#### 4) Social Contributions

- We received recognition from the Ministry of the Environment for voluntary efforts to reduce emissions of volatile organic compounds in the Fiscal 2008 Commendations for Contributions Towards Measures Against Volatile Organic Compounds.

- During the traffic safety week, we instructed employees about the issues and participated in a seatbelt campaign in cooperation with local police stations and corporations.

#### Fiscal 2009 Initiatives

In fiscal 2009, we will renew our commitment to CSR. We will make efficient use of our ISO 9001, ISO 14001 and OHSAS 18001 systems to enhance quality, the environment and occupational safety and health, and tackle new challenges. We will collaborate with government bodies and other companies to maintain security and prevent disasters at our industrial complex. We will engage more with the community and take steps to build trust.



## Shibukawa Plant

Site Report 2009

### Profile

**Address** 1135 Nakamura, Shibukawa City, Gunma

**Telephone** +81-279-25-2109

**Employees** 246 (at March 31, 2009)

**Major Products** Electronic materials : DENKA HITTPATE high thermal-conductivity aluminum substrates, Thermally conductive materials, HARDLOC and HARDLOC OP/UV adhesives, DENKA LaB6 CATHODE electron and ion emitters, ELEGRIIP dicing tape,back grinding tape

**Operations** This Plant started operations in 1951 to produce general-purpose chemical products. From 1976, it started making fine chemical products, such as structural adhesives and electronic materials. In 2005, it completed a facility for electronic materials to enter the highly promising electronics field. Our expertise with raw materials technology has enabled us to create diverse electronic raw materials that have won solid reputations for helping to conserve energy and reduce environmental impact.



### CSR Policies

#### General Manager Policies

Our KIT-09 goals for preparing for the next medium-term plan are to pursue sound production technologies and accelerate efforts to accomplish tasks.

1. Undertake safety activities focused on risk management.
2. Reach technological goals of major advancement initiative and accelerate product launches.
3. Strengthen on-site capabilities through techno-school.

#### Environmental, Safety and Quality Policies

- < Environment > We will operate in harmony with the community by protecting the environment and ensuring safety. We are endeavoring to sustainably reduce environmental impact by cutting discharges of hazardous chemicals and waste while conserving energy.
- < Safety > We will review hazard source measures from the human error standpoint. We will also ensure safe plant operations by predicting risks based on review measures and reinforce employee education.
- < Quality > We will continue to ensure the timely provision of products that satisfy customers, plan products with consideration for the environment, safety and health, and improve processes.



**Haruo Kimura**  
Executive Officer  
General Manager of Shibukawa Plant

### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

#### Community Engagement

The Belly Button Festival was held in Shibukawa on July 25 and 26, 2008. People danced around the city with funny drawings on their bellies, much to the mirth of onlookers. Many employees from the plant participated in this event.



#### Evening On-Call Drill

On March 25, 2009, we held an evening on-call fire drill through an emergency telephone tree. During the effort, we contacted our in-house fire-fighting team, the Shibukawa Fire Department and assistants from each department to request help at the site. Around 30 minutes after the drill started, approximately 130 people gathered at the plant.



#### Reduce Final Disposal Volumes

To achieve zero emissions, we reduced waste through yield improvements and recycling, by cutting packaging, and by more thoroughly separating paper waste.

#### Fiscal 2009 Initiatives

We aim to deepen community understanding of the Company and contribute to society by conducting plant tours and chemistry classes for elementary students. These efforts will complement ongoing programs, such as the pruning and weeding of hydrangeas, cleaning the Nakamura water channel and participating in the Belly Button Festival.

On the environmental front, we will continue to lower emissions of hazardous chemicals and conserve energy. We will lower waste by recycling paper and better separating waste, thereby attaining zero emissions at the plant.

## Ofuna Plant

Site Report 2009

### Profile

**Address** 13-1, Dai 2-chome, Kamakura-city, Kanagawa  
**Telephone** +81-467-45-1110  
**Employees** 211 (at March 31, 2009)  
**Major Products** Resins and plastic products: Including synthetic fibers for wigs, packaging materials, and functional films  
**Operations** Our product lineup is the fruit of advanced capabilities drawing on ejection molding, adhesion coating and film production technologies. We are DENKA's prime production unit for plastic products. We develop and manufacture such offerings as TOYOKALON synthetic fiber for top global wig and hairpiece brands, packaging tapes that include hand-cuttable and printing tapes, laterally stretched Calalyan Y polyethylene film and polyvinylidene fluoride DX Film.



### CSR Policies

#### General Manager Policies

**Philosophy** : We aim to contribute to and prosper with the community of Kamakura, which abounds with cultural, historical and environmental legacies.

**Goals** : We will contribute to the community and corporate progress by making the environment, safety and quality our top priorities.

1. Reduce our environmental footprint by conserving energy and cutting waste.
2. Undertake locally suitable initiatives to build a healthy and dynamic workplace.
3. Comprehensively manage safety relating to raw materials, products, logistics and disposal and continue to engage with the community.

#### Environmental, Safety and Quality Policies

- < Environment > 1. Comply with laws and ordinances and enhance environmental awareness  
 2. Act in line with medium-term environmental plan and improve performance  
 3. Contribute to the community
- < Safety > 1. Deploy full-fledged initiatives that ensure underlying safety  
 2. Undertake efforts that reflect local circumstances  
 3. Create a vibrant and healthy workplace
- < Quality > Continue to improve raw materials, processes and product management to pursue and maintain high quality



**Hideo Oishi**  
Executive Officer  
General Manager of Ofuna Plant

### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

- We conducted fire drills and evening on-call drills.
- We held a Group Safety Announcement Meeting to raise safety consciousness.
- We installed automated external defibrillators and conducted first-aid drills for at least half of the plant personnel, registering with the Kamakura First Aid Office.
- We held a mental health seminar and deepened understanding of psychological and physical health management.
- We conducted complete cleanups of the plant and nearby streets on the third Wednesday of each month.
- We made plant grounds available to the Fujimicho Town Association on the day of the Summer Festival (see page 18 of this report).



#### Fiscal 2009 Initiatives

In April 2009, the plant launched a productivity enhancement campaign to seize new opportunities from the prevailing economic crisis. We established six working groups in which all employees participate. One group prioritizes address the plant's weaknesses to boost production yields. Others aim to raise quality, enhance maintenance, pursue 5S gains (sorting out, systematic arrangement, cleanliness, standardizing and self-discipline), conserve energy and production management. These initiatives ultimately aim to benefit all stakeholders.

## Isesaki Plant

Site Report 2009

### Profile

**Address** **Isesaki Plant:** 245, Nishigawara, Naganuma-cho, Isesaki City, Gunma  
 Telephone: +81-276-52-4111  
**Ota Facility:** 3015 Serada-cho, Ota City, Gunma  
**Employees** 253 (at March 31, 2009)  
**Major Products** Electronic packaging materials: DENKA THERMOSHEET EC, Thermo Film ALS and other carrier tape, trays and cover tape for semiconductor and electronic components processes  
 Food packaging materials: Styrene Sheet, CLEAREN Sheet, and stretch film  
**Operations** This plant manufactures sheets and films from polystyrene, vinyl chloride and other raw materials. The Ota facility has the greatest production capacity in the Orient for these products. We supply food and electronic packaging materials that meet stringent requirements for performance and quality management, and are endeavoring to bolster our processing technologies while developing value-added offerings.



### CSR Policies

#### General Manager Policies

1. Ensure safety and health.
2. Pursuing ongoing efforts to reach DENKA100 objectives.
3. Improve customer satisfaction.
4. Create products that match changes in the social climate.
5. Reach KIT09 goals.

#### Environmental, Safety, and Quality Policies

- < Safety > 1. Ensure that no major explosions or fires occur  
 2. Eliminate occupational accidents  
 3. Eliminate new occupational illnesses
- < Environment > Conserve energy and resources and minimize environmental footprint
- < Quality > Improve quality and swiftly and accurately meet customer needs.



**Nobuyoshi Sakuma**  
Senior Executive Officer  
General Manager of Isesaki Plant

### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

- **Security and Disaster Preparedness**  
We hold annual disaster drills at the Isesaki Plant and Ota facility.



this initiative beyond our facilities to encompass the neighboring public park and streets.



- **Experiential Training**  
We conduct ongoing experiential training for frontline workers. The plant handles numerous rolls, so we have provided experiential simulations of what happens when a person is caught in them. There are a lot of cutting processes, so we have workers practice slice off cut-resistant gloves and drill in the correct use of cutters.



#### Fiscal 2009 Initiatives

The plant complies strictly with laws and ordinances and acts to safeguard the environment. We have already secured ISO 14001 certification for environmental management systems, and are now focusing on cutting waste and conserving resources and energy. We are endeavoring to boost raw material yields to reduce waste. We will continue to contribute to the community through our cleanup efforts.

We strive to prevent occupational accidents and facilities mishaps and are pushing ahead with measures to combat lifestyle diseases as part of endeavors to create a vibrant and comfortable workplace.

- **Social Contributions**

The plant implements a monthly cleanup day, and we have expanded

# Denka Singapore Pte., Ltd.

Denka Singapore Private Limited  
 Hong Leong Building, 16 Raffles Quay #18-03, Singapore 048581  
 TEL : 65 (6224) 1305

## Merbau Plant

Site Report 2009

### Profile

**Employees** 33 (at March 31, 2009)

**Operations** The Merbau Plant was DENKA's first production facility in Singapore. We established this plant in 1980 to participate in the Singapore Petrochemicals Complex project. The complex is located on Jurong Island, where we manufacture DENKA BLACK. We began operating our 50% press facility in 1984, upgrading it in 1997. We set up a granulation facility in 2002. The superior liquid absorption and electrical and thermal conductivity properties and high purity of our offerings have enabled us to export them worldwide for use in dry manganese and lithium-ion batteries and in power cables and semiconductor packaging materials.



### CSR Policies

#### General Manager Policies

- Maintain zero-accident record
- Swiftly accommodate customer requirements

#### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

- < Environment > · Prevent pollution (maintain water quality)  
 · Manage (reduce) wastes
- < Safety > · Assess and improve manual processes  
 · Undertake educational efforts:  
 — We received commendation from the U.S. Chemical Safety and Hazard Investigation Board for our video analyzing accident cases  
 — We are deploying a safety activities campaign



**Yoshiteru Yamazaki**  
 General Manager of Merbau Plant

# Seraya Plant

Site Report 2009

### Profile

**Employees** 60 (at March 31, 2009)

**Operations** This plant began polystyrene production at Seraya, Jurong Island, in 1998. Its three production facilities make high-molecular general-purpose polystyrene from a massive continuous polymerization line, methyl methacrylate styrene copolymer resin, and CLEAREN styrene-butadiene block copolymer. Our annual production capacity is 300,000 metric tons. The plant boasts the world's largest capacity in styrene resins. We aim to optimize our facilities, personnel and logistics, and have built a structure to minimize costs and enable personnel to maintain operational efficiency.



### CSR Policies

#### General Manager Policies

"Establish Healthy Condition"—Maintain a healthy plant  
 "Construction of factory being"—Construct productive facilities

1. Maintain zero-accident record and employ safety management system.
2. Ensure legal compliance.
3. Create a better working environment by strengthening administrative systems (for security, logistics, materials orders, and quality), strengthening adherence to rules, encouraging two-way communication, and pursuing our 5S program.
4. Continue to enhance our safe production technologies, deliver the quality that customers seek and renew our ISO 9001 and ISO 14001 certifications.
5. Educate employees in plant technologies and in building our maintenance system.



**Kazuya Tokumoto**  
 Deputy Managing Director  
 General Manager of Seraya Plant

Fiscal 2008 Activities	Fiscal 2009 Initiatives
< Using Resources Efficiently > We sold waste oil to a reused fuel production company.	< Using Resources Efficiently > We aim to enhance yields from polystyrene, methyl methacrylate styrene and CLEAREN. We also aim to use waste plant oil as fuel.  < Safety Initiatives > We will bolster basic education and enhance employee capabilities by improving education in chemicals, processes and equipment.

# DENKA Advantech Pte., Ltd.

Denka Advantech Private Limited  
 Hong Leong Building, 16 Raffles Quay #18-03,  
 Singapore 048581  
 TEL : 65 (6224) 1305

## Tuas Plant

Site Report 2009

### Profile

**Employees** 70 (at March 31, 2009)

**Operations** We launched this plant in 1991. It was Singapore's first fused silica filler facility for semiconductor packaging. To accommodate advances in semiconductor packaging, we began manufacturing spherical fused silica fillers in 1997. We boosted capacity in 2000 and 2006 to produce environmentally friendly packaging. We maintain stable supplies to Southeast Asia, China, Taiwan and elsewhere in East Asia. We rank alongside DENKA's Omuta Plant as the world's top producers of spherical fused silica fillers.



### CSR Policies

#### General Manager Policies

1. Ensure security and safety to keep our zero-accident record and maintain strict compliance
2. Boost the capacity of existing facilities, innovate unique technologies and cut costs to raise profitability.
3. Reduce electroconductive impurities, thus accommodating market needs, increasing customer satisfaction and expanding sales.



**Toshiyuki Abe**  
 General Manager of Tuas Plant

# Denka Advanced Materials(Suzhou) Co., Ltd.

Unit 9B Modern Industrial Square,  
 No.333 Xingpu Road, Suzhou Industrial Park, Suzhou China  
 TEL : +86-512-6287-1088

## Denka Advanced Materials(Suzhou) Co., Ltd.

Site Report 2009

### Profile

**Employees** 50 (at March 31, 2009)

**Operations** DENKA established this company in January 2006 as its first production and sales subsidiary in China since World War II. This company manufactures carrier tape for electronic packaging and micro-slit products.

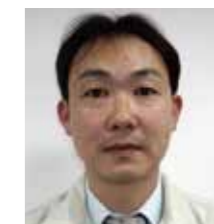


### CSR Policies

#### General Manager Policies

**Maintain our zero-accident record and improve quality by enhancing our operations.**

1. Bolster safety initiatives to maintain our zero-accident record.
2. Improve production techniques and quality management to increase customer satisfaction.
3. Maintain the workplace environment and ensure strict compliance.
4. Undertake education and drills to build a vibrant workplace.



**Yuichi Kadoya**  
 Deputy Director  
 General Manager

### Environmental and Safety Efforts

#### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

- < Environmental Initiatives > · We employed resources more efficiently by increasing production yields.  
 < Safety Initiatives > · We recorded zero accidents.  
 · We started a program of chanting safety slogans at daily morning gatherings.

In fiscal 2009, we will gather and manage SGS data—analytical data on the environmental impact of materials contained in our products—for environmental purposes and conduct regular patrols to enhance safety in hazardous areas.



## Central Research Institute

Site Report 2009

### Profile

**Address** 5-1, Asahi-cho 3-chome, Machida City, Tokyo  
**Telephone** +81-42-721-3611  
**Employees** 80 (at March 31, 2009)  
**Center Overview** Central Research Institute began operating at its current site after DENKA relocated its Meguro Research Center there in 1962. The facility has created numerous basic technologies for inorganic and organic chemicals, petrochemicals and plastic products as the spearhead of DENKA's product innovation. The center will continue exploring medium- and long-term R&D and help enhance the quality of existing offerings.



### CSR Policies

#### General Manager Policies

The institute is continuing to underpin DENKA's progress as a manufacturer by:

1. Developing new products
2. Exploring growth areas
3. Strengthening collaboration with external organizations
4. Undertaking environmental and safety initiatives

#### Environmental, Safety, and Quality Policies

We have deployed site-specific voluntary initiatives to ensure safety and health in keeping with Companywide policies. We undertake activities to ensure that each employee understands, can predict and handle hazards. We pursue change management to accommodate the diverse operations of research operations and enhance safety awareness and security skills. We prioritize mental health as part of efforts to build vibrant workplaces. We are also conducting R&D into environmental management systems activities.



**Shigetoshi Toyooka**  
 Director, Managing Executive Officer  
 General Manager of Central Research Institute



### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

During the year under review, we undertook activities to maintain our environmental management systems and to enhance safety consciousness. Safety initiatives included a disaster drill that we conducted with collaboration from the Machida Fire Station. In June 2008, we sponsored a study seminar at its premises for nine hazardous substance training associations in metropolitan Tokyo, attracting around 70 participants. The center also strengthened community ties by distributing its journal to local residents.



Environmental management systems maintenance assessment



Hazardous substance study seminar

#### Fiscal 2009 Initiatives

We will step up environmental management system efforts and bolster experiential education in safety issues, conducting drills for fires and power outages. As part of efforts to deepen community ties, in June and August 2009, respectively, we held children's chemistry classes for members of the Machida Youth Firefighters and students from the No. 4 Machida Elementary School.



Children's chemistry class

## Electronic Materials Institute

Site Report 2009

### Profile

**Address** Nakamura 1135, Shibukawa City, Gunma  
**Telephone** +81-279-25-2477  
**Employees** 93 (at March 31, 2009)  
**Research Focus** Developing highly functional electronic materials through organic and inorganic hybridization.  
**General Manager Policies**

1. Explore topics with existing products based on selectivity and concentration and undertake customer-specific research themes
2. Build production technologies that factor in high functionality and quality and cost-competitiveness
3. Create basic and component technologies that harness the mechanisms of physical properties and clarify reaction schemes



### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

The center is the fruit of the October 2008 integration of the Functional Electric Materials Research Center and the Polymer Processing Research Center. The facility pursues R&D into high-performance electronic materials that are environmentally friendly. In fiscal 2008, the center worked on heat dispersion measures that are vital for LEDs, which offer so much promise in reducing carbon dioxide emissions and eliminating the use of mercury in lighting. Numerous LED product makers have adopted these technologies.

In fiscal 2009, we are developing process adhesives that are crucial for manufacturing solar cells. We have succeeded in slashing the organic solvent and carbon dioxide emissions from such production. We have gained considerable attention for the environmental friendliness of these adhesives, which should also help to slash the prices of solar cells.

Clean rooms and automated equipment are essentials in developing electronic materials, for which the tolerance for impurities is no more than one-fiftieth the thickness of a human hair. These facilities require a lot of electricity. We are thus installing state-of-the-art equipment while modifying operations to reduce power consumption. We are switching away from paper to electronic documents as part of efforts to cut carbon dioxide emissions from our R&D activities.

We will continue R&D into environmentally friendly and safe products while pursuing low-carbon research.



**Norihiro Shimizu**  
 Executive Officer  
 General Manager of Electronic Materials Institute

## Polymer Technology Institute

Site Report 2009

### Profile

**Address** 6, Goi-Minamikaigan, Ichihara City, Chiba  
**Telephone** +81-436-26-3220  
**Employees** 136 (at March 31, 2009)  
**Research Focus** Functional resins, plastic materials and elastomers  
**General Manager Policies** We are harnessing polymer synthesis, processing and analytical technologies in our three main areas for R&D into existing and new products that can help DENKA to generate sustainable revenues and earnings.



### Fiscal 2008 Achievements and Fiscal 2009 Initiatives

This center was established on April 1, 2009, at DENKA's largest general research facility. We aim to help the Company to achieve sustainable revenues and earnings by tackling diverse technical issues and creating technologies and products that lower environmental impact, conserve energy, and contribute to safety and health.

R&D in functional resins focuses on styrene and acetate polymers. Styrene polymers offer less deformation from moisture absorption than acrylic resins, and we are positioning them for use with LED lighting.

In plastic materials, our efforts focus on making existing products lighter and thinner, with reduced solvents. These offerings include food packaging materials, industrial adhesive tape, construction materials and pipes used in agriculture and engineering. We are also developing new

products, such as weather-resistant films for solar generation systems.

Our R&D in elastomers focuses on cultivating markets for chloroprene rubber, with which we use proprietary manufacturing techniques that do not rely on oil, as well as acrylic ER rubber, which offers outstanding thermal performance. Our chloroprene rubber incorporates water-based adhesives instead of the organic ones that can cause illness in new buildings. We are working with customers to expand sales of this rubber.



**Tatsuhiro Aoyagi**  
 Executive Officer  
 General Manager of Polymer Technology Institute

## Major Affiliates

## DENKA Polymer Co., Ltd.

Site Report 2009

Profile <http://denkapolymers.co.jp>

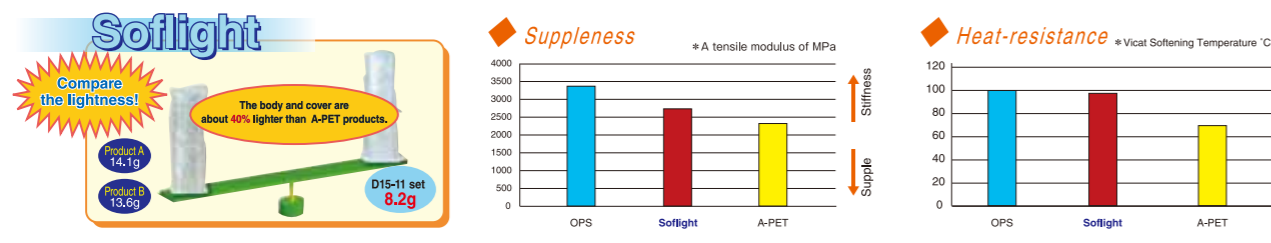
**Address** Head Office: 12-8 Kiba, 5-chome, Koto-ku, Tokyo  
**Telephone** +81-3-5245-3641  
 Plants: 3 in Chiba Prefecture (Sakura, Goi, Katori)  
**Employees** 354 full-time and 160 part-time (at April 1, 2009)  
**Major Products** OPS products, PSP food trays, food containers, SOFLIGHT products, packaging wrap and agricultural packs

Kenichi Ono  
President

## Major Activities and Achievements in Fiscal 2008

We pursued weight reductions in all products so our containers can alleviate environmental impact and conserve resources and energy. For example, we drew on our Group strengths as an integrated manufacturer of everything from monomers to finished products to innovate SOFLIGHT. This product is a next generation, lightweight and

transparent raw material that overcomes the vulnerability of OPS to cracks because it is both rigid and supple. Another benefit is that SOFLIGHT is around 40% lighter than A-PET and saves resources (see page 12 of this report).



## DENKA SEIKEN Co., Ltd.

Site Report 2009

Profile <http://www.denka-seiken.co.jp>

**Address** Head Office: 4-2 Kayaba-cho, 3-chome, Nihonbashi, Chuo-ku, Tokyo  
**Telephone** +81-3-3669-9091  
 Plants: Gosen City, Niigata (Niigata Plant, Kagamida Plant)  
**Employees** 514 (at April 1, 2009)  
**Major Products** Influenza vaccines, virological diagnostic reagents, bacteriological diagnostic reagents, immunological diagnostic reagents, clinical chemistry diagnostic reagents and general biological diagnostic reagents

Masataro Satsuka  
President

## Major Activities and Achievements in Fiscal 2008

## 1. Safety Initiatives

- The Safety and Health Committee conducted monthly safety patrols.
- We distributed an array of safety and health reference materials to employees.
- We commissioned a lecturer from M-Net Corporation to hold an in-house lecture in August 2008 on the terrors of fires and explosions.
- We arranged an in-house lecture in November by the Traffic Safety Section of the Gosen Police Station on activities to prevent traffic accidents and predict traffic dangers.

## 2. Community Activities

- Sponsorships included a ¥500,000 donation to the National Sports Festival in Niigata.
- We held a lecture on the new strain of influenza in January 2009 at the Gosen Municipal Office.
- We participated in the activities of the Gosen Gender Equality Council.
- We were involved in the Gosen Water Service Committee.

## Fiscal 2009 Initiatives

We will undertake the following Group CSR efforts.

## ① Disaster Preparedness and Worker Safety

- We plan to invite a representative of the Labor Standards Association to lecture managers.

- We will offer a class on chemical substance regulations compliance.

## ② Community Engagement

- We will exchange information with the Niigata Prefecture Industrial Siting Section about locally-based collaboration with academic and public organizations.
- We will strengthen relations and communications with the Gosen Municipal Office.
- We will support and donate to the Yokomachi Summer Festival, the Kinaseya Festival and other summer fetes around our plants.

## ③ Community Contributions

- We will remain involved with the Gosen Gender Equality Council.
- We will continue to serve on the Gosen Water Service Committee.

## ④ Employee Welfare Efforts

- We will sponsor labor union activities, notably barbeque, soft-volleyball and bowling events.

## CRK Corporation

Site Report 2009

Profile <http://www.crk.co.jp>

**Address** 306-banchi, Koyagi-cho, Takasaki City, Gunma  
**Telephone** +81-27-362-7510  
**Employees** 68 (at April 1, 2009)  
**Major Products** Rubber compounds, industrial rubber products, fire-resistant rubber products, butyl adhesive tape, water swelling leakage stop rubber tape and quakeproof manhole joints

Koji Saito  
President

## Major Activities and Achievements in Fiscal 2008

## · Environmental Activities

We took steps to prevent source waste emissions by preventing defects and enhancing yields. Production volumes were down during the year and overall wastes declined 37%.

## · Safety Activities

Members of the Safety and Health Committee conducted monthly

workplace patrols and identified hazards.

## · Community Engagement

We focused on participating in community events in the industrial park.

## Hinode Kagaku Kogyo

Site Report 2009

Profile <http://www.hinode-kagaku.co.jp>

**Address** 660 Aza Kuratani, Maizuru City, Kyoto  
**Telephone** +81-773-75-5760  
**Employees** 48 (at April 1, 2009)  
**Major Products** YORIN (fused magnesium phosphate) and TORETARO (fused silicate phosphate fertilizer)

Tatsuya Machino  
President

## Major Activities and Achievements in Fiscal 2008

- We complied with environmental legislation and prevented accidents and disasters by boosting employee awareness through education and training programs.
- We conserved energy and resources and reduced discharges.
- We participated in community environmental activities.

## Achievements

We took part in cleanups.

## Community Engagement

- The Society for Maizuru's Waterways and Sea visited our site as part of its patrols of the businesses.
- We participated in the Maizuru Clean Campaign.

## DENKA Azumin Co., Ltd.

Site Report 2009

## Profile

**Address** 118, 5 Chiwari, Nimai-bashi, Hanamaki City, Iwate  
**Telephone** +81-198-26-2131  
**Employees** 26 (at April 1, 2009)  
**Major Products** Azumin (magnesium humate fertilizer)

Masahiko Yamamoto  
President

## Major Activities and Achievements in Fiscal 2008

- We maintained our zero-accident record through workplace and committee drills on accident prediction. As of March 31, 2009, we had posted 1,461 accident-free days.
- We reported that all air, water and noise pollution from our facility were within the limits of an accord with Hanamaki City.
- We built and maintained trust with the community and collaborative ties with local residents.
- We explained to plant visitors from agricultural cooperatives that Azumin, whose principle component is natural lignite, prevents fertilizers components from leaking and is environmentally friendly.

## Fiscal 2009 Initiatives

- We will maintain our zero-accident record.
- We will pass our manufacturing technologies to younger workers and undertake safety initiatives.
- We will safeguard the environment and build and maintain community trust.

Consolidated Balance Sheets (Summary)

Account item	Amount	
	As of March 31, 2009	As of March 31, 2008
Millions of Yen		
<b>Assets</b>		
<b>Current assets</b>	<b>122,862</b>	<b>134,284</b>
Cash and time deposits	6,126	3,212
Notes and accounts receivable, trade	55,396	71,037
Inventories	48,973	47,575
Other current assets	12,618	12,679
Allowance for doubtful accounts	(253)	(221)
<b>Non-current assets</b>	<b>255,049</b>	<b>241,080</b>
Property, plant and equipment	202,310	185,683
Intangible fixed assets	4,956	2,240
Investment securities	34,036	41,175
Other	14,035	12,152
Allowance for doubtful accounts	(288)	(171)
<b>Total assets</b>	<b>377,912</b>	<b>375,364</b>

Account item	Amount	
	As of March 31, 2009	As of March 31, 2008
Millions of Yen		
<b>Liabilities and Net Assets</b>		
<b>Current liabilities</b>	<b>137,034</b>	<b>161,319</b>
Notes and accounts payable, trade	27,246	53,554
Short-term bank loans	49,730	48,632
Commercial paper	11,000	5,000
Current portion of corporate bonds	10,000	10,000
Other current liabilities	39,057	44,132
<b>Long-term liabilities</b>	<b>90,734</b>	<b>52,173</b>
Corporate bonds	20,000	20,000
Long-term debt	45,034	8,696
Other long-term liabilities	25,700	23,477
<b>Total liabilities</b>	<b>227,769</b>	<b>213,493</b>
<b>Net Assets</b>		
<b>Shareholders' equity</b>	<b>139,186</b>	<b>138,176</b>
Common stock	36,998	36,998
Capital surplus	49,303	41,576
Retained earnings	56,581	60,286
Treasury stock, at cost	(3,697)	(684)
Valuation and translation adjustment	8,414	17,845
<b>Minority interests</b>	<b>2,542</b>	<b>5,848</b>
<b>Total net assets</b>	<b>150,142</b>	<b>161,870</b>
<b>Total liabilities and net assets</b>	<b>377,912</b>	<b>375,364</b>

Consolidated Statements of Income (Summary)

Account item	Amount	
	Fiscal 2009	Fiscal 2008
Millions of Yen		
<b>Net sales</b>	<b>334,130</b>	<b>363,996</b>
Cost of sales	271,590	283,833
Selling, general and administrative expenses	52,237	50,250
<b>Operating income</b>	<b>10,302</b>	<b>29,912</b>
Non-operating income	1,968	2,328
Non-operating expense	9,176	7,321
<b>Ordinary income</b>	<b>3,094</b>	<b>24,918</b>
Extraordinary gains	—	77
Extraordinary losses	1,132	7,883
<b>Income before income taxes</b>	<b>1,961</b>	<b>17,112</b>
Income taxes - current	1,322	7,669
Income taxes - deferred	(787)	2,360
Minority interest in earnings of consolidated subsidiaries	(13)	423
<b>Net income</b>	<b>1,439</b>	<b>6,660</b>

Consolidated Statements of Cash Flows (Summary)

Account item	Amount	
	Fiscal 2009	Fiscal 2008
Millions of Yen		
<b>Net cash provided by operating activities</b>	<b>5,794</b>	<b>22,944</b>
<b>Net cash used in investing activities</b>	<b>(33,876)</b>	<b>(21,668)</b>
<b>Net cash used in financing activities</b>	<b>31,096</b>	<b>(1,815)</b>
<b>Effect of exchange rate changes on cash and cash equivalents</b>	<b>(71)</b>	<b>(139)</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>2,942</b>	<b>(678)</b>
<b>Cash and cash equivalents at the beginning of the year</b>	<b>3,162</b>	<b>3,841</b>
<b>Increase of cash and cash equivalents resulting from inclusion and exclusion of subsidiaries from consolidation</b>	<b>(27)</b>	<b>—</b>
<b>Cash and cash equivalents at the end of the year</b>	<b>6,077</b>	<b>3,162</b>

Consolidated Statements of Shareholders' Equity for Fiscal 2008 (April 1, 2008, to March 31, 2009)

	Shareholders' equity					Valuation and translation adjustments				Minority interests	Total net assets
	Common stock	Capital surplus	Retained earnings	Treasury stock at cost	Total shareholders' equity	Unrealized gain on securities	Revaluation reserve for land	Foreign currency translation adjustments	Total valuation and translation adjustments		
Millions of Yen											
Balance at March 31, 2008	36,998	41,576	60,286	(684)	138,176	7,194	11,163	(512)	17,845	5,848	161,870
<b>Changes of items during the term</b>											
Issue of new shares		7,738			7,738				—		7,738
Dividends from retained earnings			(4,974)		(4,974)				—		(4,974)
Net income			1,439		1,439				—		1,439
Net increase in treasury stock				(3,127)	(3,127)				—		(3,127)
Gain on sales of treasury stock		(10)		114	103				—		103
Change in scope of consolidation			(171)		(171)				—		(171)
Reversal of revaluation reserve for land			1		1				—		1
Net changes of items other than shareholders' equity					—	(4,879)	(3,553)	(998)	(9,431)	(3,306)	(12,737)
<b>Total changes of items during the term</b>	<b>—</b>	<b>7,727</b>	<b>(3,704)</b>	<b>(3,013)</b>	<b>1,009</b>	<b>(4,879)</b>	<b>(3,553)</b>	<b>(998)</b>	<b>(9,431)</b>	<b>(3,306)</b>	<b>(11,727)</b>
Balance at March 31, 2009	36,998	49,303	56,581	(3,697)	139,186	2,314	7,610	(1,510)	8,414	2,542	150,142

Corporate Data (as of March 31, 2009)

**Established:** May 1, 1915  
**Paid-in capital:** ¥36,998,436,962  
**Number of employees:** 4,783 (consolidated) and 2,773 (non-consolidated)

**Directory**

- Head Office:**  
Nihonbashi Mitsui Tower, 1-1, Nihonbashi Muromachi, 2-chome, Chuo-ku, Tokyo 103-8338, Japan  
Tel: +81-3-5290-5055
- Branches**  
Osaka, Nagoya, Fukuoka, Niigata, Hokuriku (Toyama), Sapporo and Tohoku (Sendai)
- Sales Offices**  
Nagano, Takasaki (Gunma)  
Hiroshima, Takamatsu, Akita, Ageo (Saitama) and Taipei (Taiwan)
- Plants**  
Omi (Niigata), Omuta (Fukuoka)  
Chiba, Shibukawa (Gunma)  
Ofuna (Kanagawa) and Isesaki (Gunma)
- Research Institutes**  
Central Research Institute (Tokyo)  
Electronic Materials Institute  
Polymer Technology Institute

**Overseas Subsidiaries**

New York, Düsseldorf, Singapore, Shanghai  
Suzhou and Hong Kong

Shareholder Information (as of March 31, 2009)

- Total number of authorized shares 1,584,070,000
- Shares of common stock issued 505,818,645
- Number of shareholders 51,351
- Major Shareholders

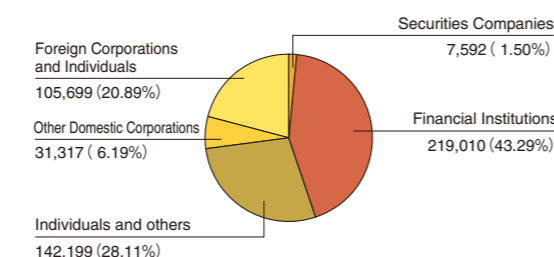
	Number of shares held (thousands)	Percentage of shares held (%)
Japan Trustee Service Bank, Ltd. (Trust Account)	46,469	9.18
Japan Trustee Service Bank, Ltd. (Trust Account 4G)	35,631	7.04
The Master Trust Bank of Japan, Ltd. (Trust Account)	24,955	4.93
National Mutual Insurance Federation of Agricultural Cooperatives	15,965	3.15
Trust & Custody Services Bank, Ltd., as trustee for Mizuho Bank Ltd. Retirement Benefit Trust Account re-entrusted by Mizuho Trust and Banking Co., Ltd.	15,275	3.01
DENKI KAGAKU KOGYO KABUSHIKI KAISHA	14,679	2.90
Mitsui Life Insurance, Co., Ltd.	13,908	2.74
Mitsui Sumitomo Insurance Co., Ltd.	6,916	1.36
Japan Trustee Service Bank, Ltd. (Trust Account 4)	6,914	1.36
Trust & Custody Services Bank, Ltd. (Securities Investment Account)	6,608	1.30
Citibank Hong Kong S/A Fund 115	5,698	1.12

Board of Directors (as of June 23, 2009)

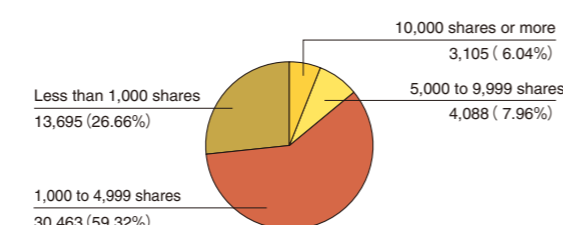
Directors, Corporate Auditors and Executive Officers

- |                    |  |
|--------------------|--|
| Seiki Kawabata     | President and Representative Director, Chief Executive Officer             |
| Higashi Ito        | Representative Director, Executive Vice President, Chief Operating Officer |
| Koji Minai         | Representative Director, Senior Managing Executive Officer                 |
| Takashi Toratani   | Director, Managing Executive Officer                                       |
| Shigetoshi Toyooka | Director, Managing Executive Officer                                       |
| Tetsuro Maeda      | Director, Managing Executive Officer                                       |
| Shinsuke Yoshitaka | Director, Senior Executive Officer   |
| Mamoru Hoshi       | Director, Senior Executive Officer   |
| Kozo Tanaka        | Outside Director   |
| Tadasu Horikoshi   | Outside Director   |
| Nobuyoshi Sakuma   | Senior Executive Officer   |
| Hitoshi Watanabe   | Senior Executive Officer   |
| Kenichi Ono        | Senior Executive Officer   |
| Daiichiro Uematsu  | Senior Executive Officer   |
| Haruo Kimura       | Executive Officer  |
| Hideo Oishi        | Executive Officer  |
| Tatsuhiko Aoyagi   | Executive Officer  |
| Mitsukuni Ayabe    | Executive Officer  |
| Shotaro Fujii      | Executive Officer  |
| Shinji Sugiyama    | Executive Officer  |
| Shigeru Matsumoto  | Executive Officer  |
| Shohei Tamaki      | Executive Officer  |
| Hideyuki Udagawa   | Executive Officer  |
| Norihiro Shimizu   | Executive Officer  |
| Manabu Yamamoto    | Executive Officer  |
| Yukinori Totake    | Standing Corporate Auditor   |
| Takayasu Tanaka    | Outside Standing Corporate Auditor   |
| Kenichi Tsuchigame | Corporate Auditor  |
| Toshiaki Tada      | Outside Corporate Auditor  |

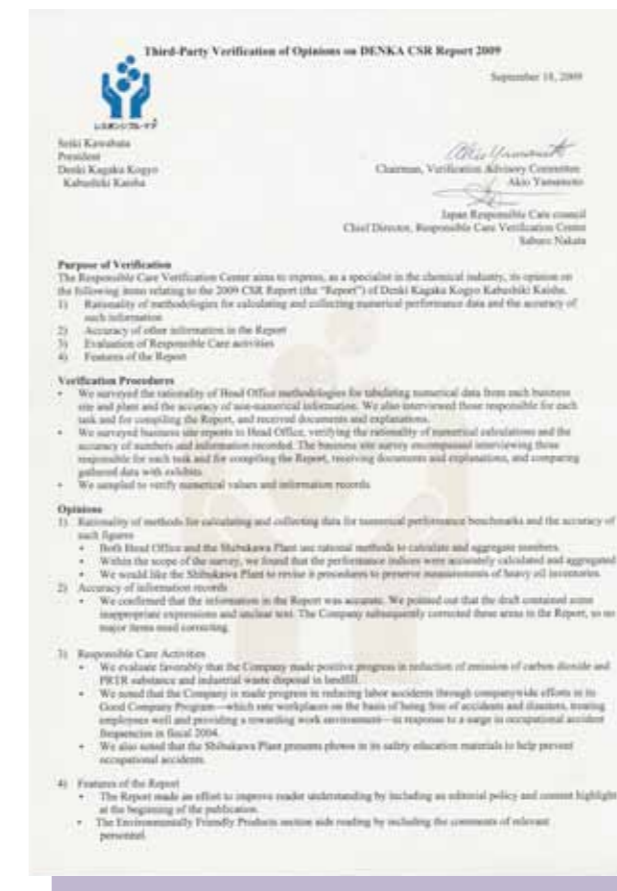
Shareholder Composition (Thousand shares)



Shareholder Composition by Number of Shares Held (persons)



Implementing Third-Party Audits



Editorial Afterword

Thank you for reading the CSR Report 2009.

In fiscal 2008, we stepped up our commitment to a cleaner future, particularly through lower carbon dioxide emissions, by establishing the Environmental Burdens Reduction Promoting Department. We will constantly review our Responsible Care efforts that have been a key focus for us as a manufacturer of chemical products, while continuing to fulfill our responsibilities as a corporate citizen by making steady progress in safeguarding the environment.

This report highlighted our environmentally friendly products and other aspects of our Group-wide environmental commitment to a better world, and also included a feature on safety, security and disaster prevention. We deployed safety measures at the Omi mine, the source of carbide for the Omi Plant, as well as disaster preparation efforts at the petrochemicals complex at which the Chiba Plant operates.

We would greatly appreciate your candid feedback on this report. We would like the opinions of as many stakeholders as possible, and aim to reflect those views in our CSR activities.

We hope that the report enhances understanding of DENKA's activities and efforts.



September 2009

*Higashi Ito*  
 Higashi Ito  
 Representative Director, Executive Vice President  
 Chief Operating Officer



# DENKA CSR REPORT 2009

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



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