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# 2012

## Environmental and Social Report

Our Commitment to CSR



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**Editorial Policies**

- This is our third report in English (we have published 11 reports in Japanese since 2001) in which we have emphasized both readability and ease of understanding for all our stakeholders.
- We include the results of an objective third-party evaluation of our Responsible Care initiative.

**Scope of This Report**

**Organization**

NIPPON SHOKUBAI CO., LTD.  
 Osaka Office, Tokyo Office  
 Himeji Plant, Kawasaki Plant, Suita Plant,  
 Advanced Materials Research Center,  
 Strategic Technology Research Center,  
 Superabsorbents Research Center,  
 Fine & Specialty Chemicals Research Center,  
 E & I Materials Research Center,  
 GSC Catalyst Technology Research Center,  
 Process Technology Center  
 (Unless otherwise stated, all data on business performance refers solely to Nippon Shokubai Co., Ltd.)

**Main Group Companies**

**In Japan**  
 Nippon Chemicals Co., Ltd., Nippon Polyester Co., Ltd.,  
 Tokyo Fine Chemical Co., Ltd., Chugoku Kako Co., Ltd.,  
 Nippon Polymer Industries Co., Ltd.,  
 Nihon Jyoryu Kogyo Co., Ltd.,  
 NIPPON NYUKAZAI CO., LTD., Nisshoku Butsuruy Co., Ltd.

**Outside Japan**  
 NA Industries, Inc.  
 PT.NIPPON SHOKUBAI INDONESIA  
 NIPPON SHOKUBAI EUROPE N.V.  
 Singapore Acrylic Pte Ltd. / Singapore Glacial Acrylic Pte Ltd.  
 NISSHOKU CHEMICAL INDUSTRY (ZHANGJIAGANG) CO., LTD.  
 SINO-JAPAN CHEMICAL CO., LTD.

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**Supporting the sustainable development of society through CSR-focused management**

More than a year has passed since the Great East Japan Earthquake struck on March 11, 2011. Reconstruction efforts in the affected areas have gradually begun to make progress, but we remain aware of the enormous damage that resulted, and we sincerely wish for the earliest possible recovery of the affected areas.

As the public become more aware of the causes of the accident at the Fukushima Daiichi Nuclear Power Station triggered by the earthquake, we must all remain cognizant of the risks of excessive reliance on technology, overconfidence in our abilities, and the tendency to let down our guard. As operators of a manufacturing business, we at Nippon Shokubai must humbly reflect on our back-to-basics mission statement and the commandment that has remained part of our corporate credo for some 40 years: "Safety takes priority over production." In this spirit, we will continue to uphold our management philosophy through our commitment to safe, reliable, and stable manufacturing operations.

The power shortages that have plagued our economy since last summer are also raising renewed questions about the commitment to "sustainable development." At the Nippon Shokubai Group, we remain dedicated to contributing to this goal through the chemical industry.

**Nippon Shokubai's commitment to CSR-focused management**

Under our corporate philosophy of "TechnoAmenity — Providing value and comfort to people and society with our unique technology," we are implementing our management philosophy, which entails coexisting with society and working in harmony with the environment, among other aspects. In keeping with this approach, we are actively engaged in CSR-focused management while fulfilling our corporate social responsibility and remaining in compliance with all mandated requirements from communities and society. In 2006, we strengthened our CSR system by, among other initiatives, establishing a CSR Committee. In 2008, we promoted the Nippon Shokubai Reforestation Campaign in Japan and China.

In 2009, we signed the "Declaration of Biodiversity by Keidanren (Japan Business Federation)" and have worked extensively to fulfill our corporate social responsibility by participating as a partner in upholding this declaration.

**Responsible Care activities as the pillar of our CSR-focused management**

Nippon Shokubai was one of the earliest members of the Japan Responsible Care Council (JRCC), which was founded in 1995. Consequently, we are actively implementing Responsible Care (RC) activities as the centerpiece of our CSR-focused management by addressing environmental protection; process

safety and disaster prevention; occupational health and safety; chemical safety; quality; and communication with society.

We are currently promoting RC activities according to our 7th Medium-term RC Promotion Basic Plan (spanning fiscal 2010–2012) and have just completed the first two years of this plan.

Regarding our environmental protection initiatives, as a result of our energy conservation measures throughout fiscal 2011, we succeeded in steadily reducing our product energy intensity. As for our safety initiatives, we are undertaking a re-inspection of our production sites and technologies. We implemented the re-inspection by confirming our initiatives to prevent explosions and fires in fiscal 2010 and to prevent industrial accidents in fiscal 2011. In addition, we are ensuring an appropriate response to various international chemical regulations including REACH of the EU.

As a chemical manufacturer, we believe that we can best contribute to the environment and society through the production of high-quality products incorporating high added value in a safe, stable, and efficient manner while continuing to adhere to the requirements of Responsible Care in the future.

**Dedicated to providing new value through innovative technologies**

Envisioning ourselves in 2025 as a chemical company that provides new value through innovative technologies, in fiscal 2010 we began promoting our long-term business plan "TechnoAmenity 2015" under the slogan "challenging to the future, make dreams come true."

Under this plan, we are cultivating our electronic & information materials business and renewable energy business, entering the health and medical care sector, and enhancing our core businesses such as acrylic acid and esters as well as ethylene oxide and its derivatives. We also aim to source materials from non-fossil-based sources while striving to conserve energy and reduce our CO<sub>2</sub> emissions. Through these initiatives, we will implement "TechnoAmenity" in order to further contribute to the protection of the global environment and the sustainable development of society.

In this report, we introduce the CSR initiatives of the Nippon Shokubai Group, which encompasses our RC activities. We welcome your continued support and frank opinions, and we greatly appreciate your cooperation with our initiatives.

June 2012

*M. Ikeda*  
 Masanori Ikeda, President

<Corporate Philosophy>

# TechnoAmenity

Providing value and comfort to people and society,  
with our unique technology

## Management Philosophy

We will conduct all of our corporate activities based upon a deep respect for humanity.

We will pursue innovative technology.

We will aim at coexisting with society, and working in harmony with the environment.

We will act on the global stage.

## Nippon Shokubai Corporate Behavior Charter

In the belief that it is our social responsibility to conduct business based upon the principles of compliance and self-responsibility for the sake of proper social development, we have set forth the following basic corporate behavior guidelines as the "Nippon Shokubai Corporate Behavior Charter."

1. Guided by our Corporate Philosophy of "TechnoAmenity," we will conduct all of our actions as a good corporate citizen.
2. We will comply with relevant laws both inside and outside of Japan, and act in accordance with in-house regulations.
3. We will create and nurture a sound, vibrant workplace, where each individual can hone their professional competence and find fulfillment in their career.
4. We will develop and market products and services that are both safe and useful, based upon an accurate understanding of social demands.
5. We will commit ourselves to eliminating labor hazards and accidents, and constantly strive to protect the global environment.
6. We will conduct business based on fair and open competition.
7. We will take a firm stance when dealing with unlawful or antisocial groups.
8. We will ensure frequent communications with our shareholders and members of society in general, and guarantee the appropriate disclosure of corporate information.
9. With respect for the culture and customs of every nation/region we serve, we will contribute to their development and wellbeing through community-based business undertakings.
10. We will ensure the solid and sustainable development of the company through business undertakings based soundly upon the above action guidelines.

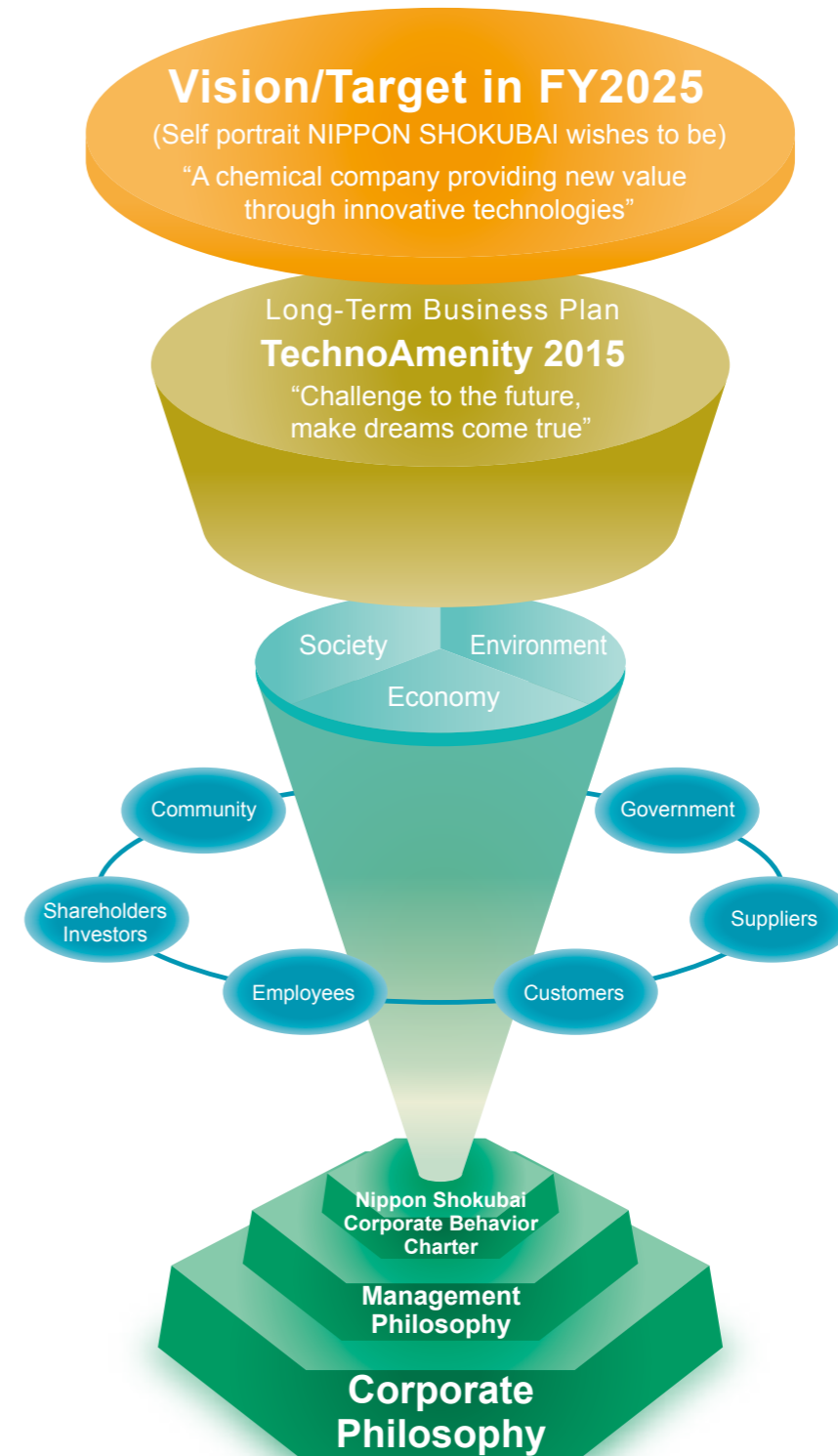
### CSR Implementation Structure

In an effort to embody our CSR management with a high degree of effectiveness, the CSR Management Committee, chaired by the president, provides overall coordination while carrying out inspections and monitoring the implementation of the policies, and action plans as well as the achievements of each committee.



In accordance with "TechnoAmenity", our corporate philosophy, Nippon Shokubai established a management philosophy and corporate behavior charter to comprehensively view our corporate behavior from economic, social and environmental perspectives, setting out our corporate ethics, Responsible Care (RC), human rights & labor, information disclosure, social contribution and corporate governance as our management's top priority issues and implementing our activities to enhance our corporate value via continuing dialogue with various stakeholders, including our customers, business partners, shareholders/investors, public administration, employees and local communities.

Based on this concept of CSR, we will strive to contribute to the development of a sustainable society by implementing our Long-term Management Plan: "TechnoAmenity 2015 — Challenge to the future, make dreams come true —" toward the realization of our vision/target (ideal attitude) in 2025.





Corporate Ethics

We remain committed to various group-wide initiatives intended to further improve and strengthen our corporate ethics and legal compliance systems.

Corporate Ethics Training

• Training of Executive Officers

In December 2011, we provided a training session for executives and operating officers (as well as corporate auditors, as observers) with the corporate goal of strengthening internal controls and improving corporate governance.

The lecture was given by Kozo Arao, a lawyer serving as an outside auditor for our company. Covering specific cases regarding executive duties, the responsibilities of directors, and the principles behind management decisions, the lecture confirmed the importance of corporate governance and related aspects.



• Position-targeted Training

From July to October 2011, we had outside lecturers provide our rank-and-file employees with training in corporate ethics. A total of 24 training sessions were provided to more than 1,400 employees in attendance, which included almost all targeted employees.

In these training sessions, employees learned about modeling behavior on corporate ethics through concrete examples. Employees were also made aware of the importance of day-to-day operations through consideration of behaviors and the integrity required for corporate ethics.



• Workplace Training

Starting in August 2010 and continuing throughout fiscal 2011, we introduced workplace training in corporate ethics that encompassed our goal of further consolidating and instituting corporate ethics. All workplace training sessions were developed to promote lively discussion on training issues such as corporate ethics and legal compliance.

In April 2012, we focused on discussing a more challenging training agenda and on addressing the types of problems that could occur in our own departments.



Corporate Ethics Internet Portal

We have created an Internet portal on our intranet titled "Understanding Corporate Ethics." This site provides a basic introduction to contracts and makes available a variety of related documents on Japanese Antitrust Law and the Subcontract Act, web links to related laws, and a FAQ section. This site enables us to provide the latest information in a timely manner following the revision of laws and regulations.



"Understanding Corporate Ethics"

Nippon Shokubai Compliance Guidebook

We compiled the Nippon Shokubai Compliance Guidebook to serve as a concrete behavioral guideline based on the Nippon Shokubai Corporate Behavior Charter. To help raise awareness, we distributed it to all employees.



"Nippon Shokubai Compliance Guidebook"

Training in Specific Laws and Regulations

• Training in Credit Management

In October and November 2011, we provided credit management training for employees working in the Sales and Purchasing Departments. More than 120 employees attended the four sessions that confirmed the importance of credit management and how to employ it at the start of trading, during normal times, and in emergencies.

In this training project, we prepared a "credit management manual" by coordinating the internal rules on credit management. The credit management manual was introduced in the training and the main points were explained.

Lectures were also presented by external consulting firms regarding the latest economic trends as well as bankruptcy trends and the like.



• Understanding Contracts (Research Department)

Following the first course (Basic Introduction to R&D Contracts) presented in February 2011, we continued with training sessions for our Research Department to impart a basic understanding of contracts; the second course (Non-disclosure Agreements) was held in September 2011, and the third (Collaborative R&D Contracts) in March 2012.

In this training, employees were taught the significance of each contract and cautions regarding our business, considerations of the contract structure, and key provisions.



• Understanding Contracts (Sales and Purchasing Departments)

In March 2012, we repeated our basic introduction to contract training for our Sales and Purchasing Departments, particularly for employees who had not attended the course presented in fiscal 2009 and for those who wished to re-train.

In this course, employees learned the importance of concluding contracts and the major provisions of contracts.

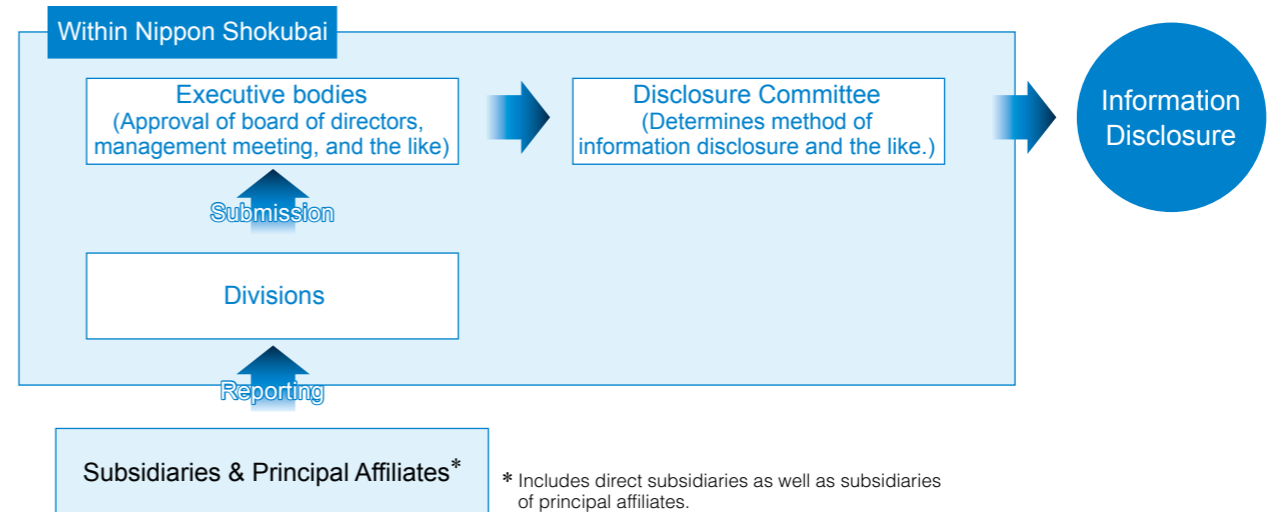


We will continue to systematically implement training in the various specific laws and regulations adopted by our company to date. We aim to raise awareness and establish knowledge of such laws and regulations.

Information Disclosure

In order to fulfill our social responsibility and ensure full management transparency while promoting a better understanding of our company among all stakeholders, we shall fairly disclose relevant corporate information regarding Nippon Shokubai, our subsidiaries, and our major affiliates on a timely basis.

Flow of Information Disclosure





In order to impart a deeper understanding of our company, we strive to actively communicate with all stakeholders through environmental protection initiatives, involvement in local communities, and by supporting the development of the next generation. We contribute to society by focusing on maintaining harmony with society and the local community through our business activities.

## Environmental Protection Initiatives

### ■ Forest Development Initiatives

In an effort to help mitigate the threat of global warming, which presents a challenge for the 21st century, we are promoting our forest development initiative among employees who participate as volunteers in forest protection and regeneration. Through this awareness-raising effort, we aim to cultivate personnel who can think for themselves and act on the environment.

#### ◆ Contributing to Our Forests and Water Resources

The Akasai Valley is part of the headwaters of the Ibo River, which faces our Himeji Plant. In order to enhance conservation of the headwater forest that extends to that area, we are undertaking maintenance work in order to leave a beautiful forest for future generations. In addition, we have undertaken an initiative to offer "forest tours" to impart the importance of biodiversity.

Location: Akasai Valley, Hara-chinai, Haga-cho, Shiso-shi, Hyogo prefecture

Activity: Forest improvement and forest tours and the like  
Start date: November 2008



Photo taken in May 2011



Photo taken in August 2011



Training new employees hired in April 2011

\* These activities were undertaken in cooperation with National Land Afforestation Promotion Organization and NPO.

### ■ Conserving and Popularizing the "Nojigiku" Chrysanthemum

In order to rescue, conserve, and popularize the endangered "Nojigiku" chrysanthemum, the Hyogo prefectural flower, we began cultivating it in 1972. We have been distributing seedlings every year since 1974 in cooperation with Hyogo Prefecture. In April 2011, we distributed 35,000 seedlings to 225 locations and 68 organizations, including local governments.

Today, 160 varieties of Nojigiku, including foundation stock, have been conserved and cultivated in a 2,000-square-meter green yard at the Himeji Plant.

### ■ Participation in the "Sea Forest" Tree-planting Project

In November 2011, 42 employees of our Tokyo head office and their families took part in a tree-planting event for the "Sea Forest" (*Umi-no-Mori*) Project being promoted by the Tokyo Metropolitan Government. Participants toiled in the sun in the hope that the area of reclaimed land in Tokyo Bay made from refuse covered with soil would be reborn as a beautiful lush forest.

#### ◆ Japan-China Friendship Forest Development and Global Warming Prevention

Acknowledging the serious problem of global desertification, we are working to prevent desertification in inland China. We are planting trees with local residents and intend to restore the forest throughout the area where it once existed on this land.

Location: Ejina Horo Banner, Inner Mongolia Autonomous Region, China

Activity: Afforestation, maintenance, management, and the like  
Start date: October 2008



Photos taken in October 2011



Nojigiku in a conservation garden



Seedlings being distributed



## Our Policy on Social Initiatives

In keeping with our corporate philosophy of TechnoAmenity and our commitment to protecting biodiversity, we intend to adopt initiatives focused on benefitting and increasing the prosperity of our stakeholders, including local communities, while maintaining clear communication with society as a good corporate citizen.

## Assisting the Community

### ■ Cleanup Campaign



Tsujido Beach cleanup at the Kawasaki Plant



Kanzaki River riverbed cleanup at the Suita Plant

We participate in regular community cleanup campaigns. The Kawasaki Plant, together with affiliate companies, participates in the Tsujido Beach cleanup in Kanagawa prefecture. The Suita Plant participates in the riverbed cleaning effort along the Kanzaki River as part of the Kanzaki River Adopt-a-River Program. We are also collaborating with community beautification activities.

### ■ Sweet Potato Harvest Party

We grow sweet potatoes in the potato fields we have created in the green yard of our Himeji Plant. Each year in October, we invite neighborhood kindergartners to enjoy harvesting sweet potatoes. In fiscal 2011, about 810 parents and children visited together.

We have been holding this activity since 1971 and it has become rooted in the community. In fact, some of the children who harvested potatoes in the past are now employed with us.



Kindergartners harvest potatoes

### ■ Volunteer Initiatives

Employee volunteers participate in events held at the Nukachan Welfare Workshop (a support facility for the disabled) located near the Himeji Plant.

We hope to further expand our circle of volunteerism in the future.



Christmas party

## Initiatives to Help Raise Future Generations

### ■ "Local Student Co-op Program" Week

Each year in May, the Himeji Plant hosts grade 8 students from the local junior high school in order to give them work experience. This program is implemented by Hyogo Prefecture in an effort to help students learn about the community and foster a "zest for living" through work experience. In fiscal 2011, a total of 10 students gained experience through this program.



### ■ Science Booth

We staffed a science booth at the Sakurayama Park Festival in July 2011 at the Himeji City Science Museum, which organized the event. We helped mainly elementary and junior high school students participate in chemical experiments with our superabsorbent polymer. All who attended clearly enjoyed the thrill of working with chemistry.





## Contributing to Society and Earning Public Trust

### Our Relationship with Our Employees

We are committed to maintaining a healthy work environment and respecting the human rights of each of our employees. We support all our employees by providing a positive working environment that contributes to a high level of job satisfaction.

#### An Environment That Contributes to Job Satisfaction

We seek to revitalize our employees and the organizations as the foundation for achieving our medium- and long-term business plans.

With the understanding that responsibility for oneself equates to self-direction, and with the goal of forming a corporate structure with the dynamic flexibility to respond quickly to changing times, we are striving to design and manage a system framework that can develop autonomous workers and awaken the ambitions of individual employees.

##### Human Resources Management System

We have introduced a human resources management system based on management by objectives, which is applicable to all employees, and we are creating a substantial system that is both open and transparent.

1. Basic approach
  - Create a substantial system that is both open and transparent.
  - Implement a fair employee reward mechanism based on roles, performance, and competency.
  - Structure a system capable of responding to diverse values.
2. Framework
  - Multiple avenues to rewards (Rewards can be accrued for performance or for demonstrated skills and proficiency.)
  - Clarification of job grade criteria and evaluation criteria (Roles and required performance and competency are specified.)
  - Feedback focused on human resources development (Advice is provided according to management by objectives and an appropriate evaluation system.)

##### Human Resources Development

1. Personnel objectives
  - Independently minded personnel capable of taking the initiative in identifying and resolving issues
  - Personnel capable of flexibly adapting themselves and their organizations
  - Personnel capable of demonstrating sophisticated expertise
  - Personnel capable of working with a diverse international community
2. Characteristics of the human resources development system
  - Development according to section
    - Emphasis on improving organizational and management skills, level of expertise, and competency by section
  - Self-directed development
    - Emphasis on self-directed development to boost career development
  - Development according to corporate hierarchy
    - Emphasis on strengthening management leadership

#### A Positive Working Environment

In an effort to provide our employees with the opportunity to achieve "the good life," we offer a wide-ranging employee welfare system for the benefit of our employees and their families. This initiative includes wealth building, emergency preparedness, support for daily life activities, planning for a stable retirement, positive use of personal time, and maintenance of health and wellness. Our company will continue to support a good life for our employees through self-help as we enter the era of a low birth rate and an aging population.

##### Supporting the Positive Use of Personal Time

We advise our employees on the positive use of their time away from work by offering guidance in maintaining a balanced work, family, and social life, thus contributing to life enrichment.



Ski tour held as an employee welfare event

##### Providing Balanced Assistance for Child Care and Nursing Care

Japan's low birth rate and aging population remain pressing issues; therefore, it is essential that all sectors of society continue to support child care and nursing care. Private enterprises are also required to create an environment that supports a balance among work, child care, and nursing care. We are responding to these social realities by striving to create an environment and infrastructure that provides a variety of systems for supporting employees with their parenting and nursing responsibilities while employed. We also published a guidebook that summarizes our balanced support system, and we continue to keep our employees broadly informed and educated.

##### Re-employment System

This system corresponds to measures addressing the rescheduling of full pension eligibility age and is intended to help stabilize the lives of retired employees through re-employment. The period of employment extends until the beginning of an employee's eligibility for full pension. This initiative contributes to an employee's sense of security, self-worth, job satisfaction and motivation, as it provides ongoing employment in a familiar work environment.

#### Toward a Sound Labor-Management Relationship Based on Mutual Respect

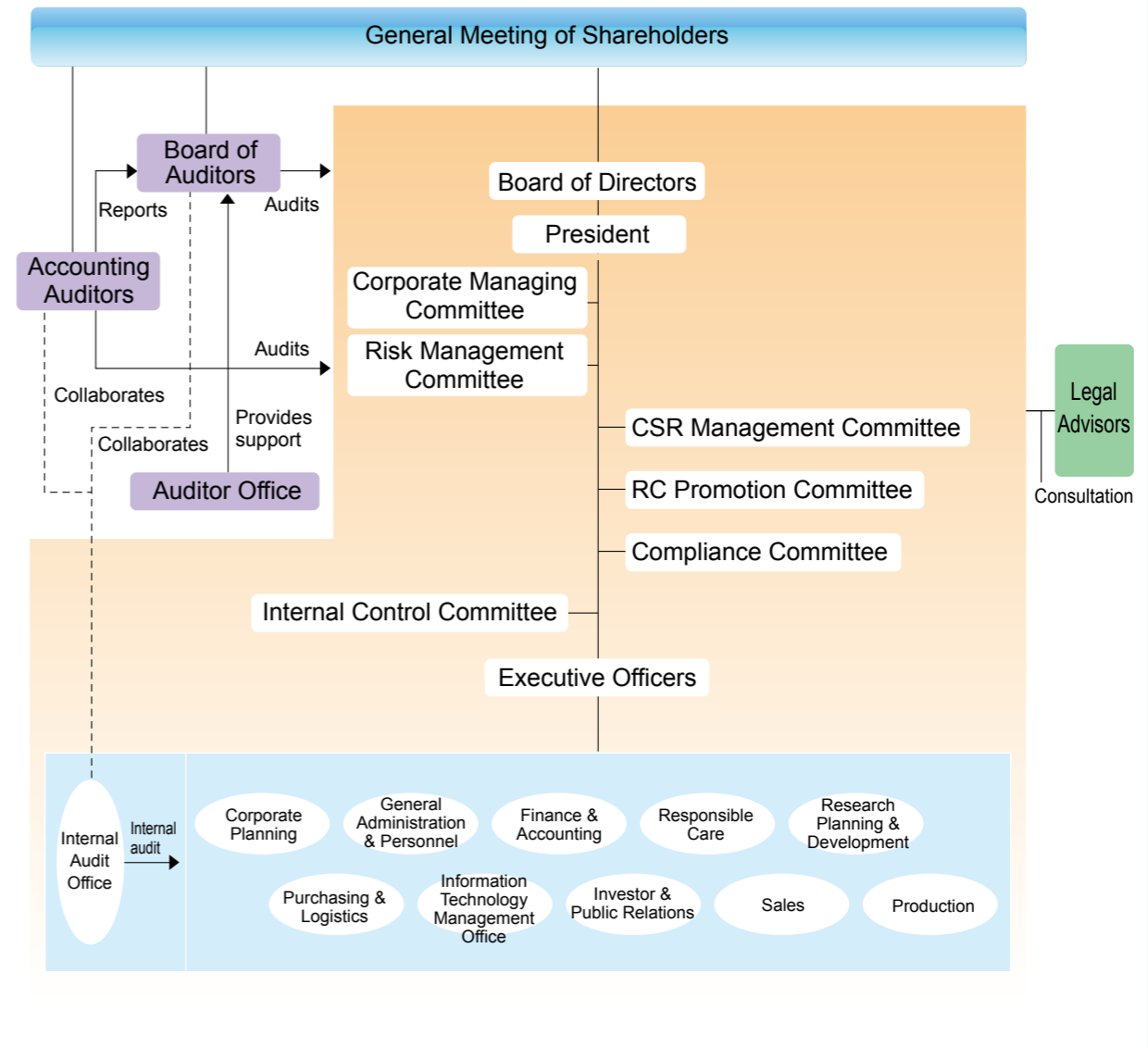
Nippon Shokubai and the Nippon Shokubai Labor Union maintain a dialogue based on mutual respect. Through our good labor-management relationship based on mutual understanding and trust, we are addressing the resolution of various issues and achievement of goals through cooperation. Under the union shop agreement, all our employees — except for managers — are required to join the union.

## Corporate Governance

### Management Structure

We are working to improve our corporate culture and strengthen our competitiveness in order to respond to global trends. Our approach to corporate governance therefore establishes our foundation. Using the system illustrated in the following diagram, we are taking steps to revitalize our board of directors, strengthen our audit system, improve the efficiency of our management structure, and improve and strengthen our compliance system.

#### Our Corporate Governance System (as of April 1, 2011)



##### Board of Directors

Supervises the execution of duties of each director and reports, deliberates on, and resolves matters related to execution of duties. In general, the board of directors convenes monthly.

##### Corporate Managing Committee

As an advisory body to the president, this committee deliberates on basic management policies and related matters. It also consults on the execution of important divisional matters.

##### Board of Auditors

Comprising two external auditors and two internal auditors, this board convenes monthly in general, submits reports, and engages in discussions and deliberations on important matters.

##### Risk Management Committee

Chaired by the president, this committee implements periodic measures in response to various wide-ranging risks to which the company is exposed.

##### CSR Management Committee

Chaired by the president, this committee determines the company's CSR direction and promotes CSR initiatives that contribute to the interests of stakeholders while maintaining coordination with the other committees.

##### RC Promotion Committee

Chaired by the president, this committee promotes the company's Responsible Care activities. It formulates the RC Promotion Basic Plan and works to further improve safety, quality, and environmental issues.

##### Compliance Committee

Chaired by the president, this committee improves and strengthens the company's overall corporate ethics and systems for compliance with laws and regulations.

##### Internal Control Committee

This committee, in full operation since April 2008 under the chairmanship of the president, has established a system to ensure the reliability of financial reporting as enforced by the Financial Instruments and Exchange Act. It also seeks to process company operations more efficiently and effectively.

## Responsible Care Activities

For the chemical industry, Responsible Care (RC) activities are very important contributors to sustainable development through their focus on health, safety, and environmental protection over the total product life cycle. At the same time, they help to increase the trust of society through dialogue.

Nippon Shokubai participated in the Japan Responsible Care Council (JRCC) at the time of its establishment in 1995. We have been actively promoting RC activities with a focus on our main pillars: environmental protection; process safety and disaster prevention; occupational safety and health; chemical safety; quality; and communication with society. We are determined to continue gaining the trust of society with our group-wide RC activities by contributing to society and fulfilling our corporate social responsibility.

### RC Policy

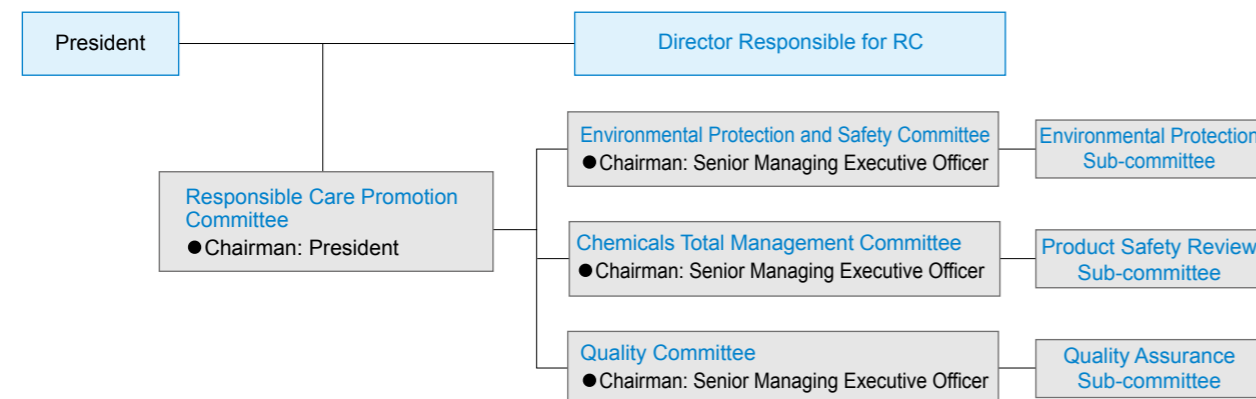
In conformity with our Corporate Philosophy, Management Philosophy and the Nippon Shokubai Corporate Behavior Charter, we rank it as an important management measure to provide products and technologies that contribute to society and environmental protection. In addition, while paying due respect to the principle of Sustainable Development, we are determined to conduct all activities in accordance with the following policy related to environmental protection, safety and product quality that will bring our business operations into harmony with the global environment.

- 1 **Aim at environmental protection and reduction of negative environmental impact throughout the entire life cycle of a product, from development to disposal.**
- 2 **Ensure the safety of our employees and our communities by targeting zero accidents and zero disasters with a commitment to the principle "Safety takes priority over production."**
- 3 **Confirm the safety of chemical materials, intermediates and products, and consider the health of our customers, employees of our logistics subcontractors, our employees, and others.**
- 4 **Stably supply products and associated services that meet customer satisfaction and inspire their trust.**
- 5 **Publicly announce the results of these activities and make an effort to communicate for proper understanding.**

We will implement this RC Policy in all our business operations by ensuring all employees have a thorough understanding and awareness of its importance. The president shall be the person with the ultimate responsibility for implementing this policy.

### RC Promotion Organization

The president is chairman of the RC Promotion Committee, and technical committees and sub-committees are established to promote company-wide RC activities.



### The Results of Our 7th Medium-term Responsible Care Promotion Basic Plan in Fiscal 2011

Concurrent with our medium-term business plan, Nippon Shokubai has formulated a three-year Medium-term Responsible Care Promotion Basic Plan targeting safety, quality, environmental protection, and other priorities. In fiscal 2011, our environmental protection initiatives succeeded in lowering both our energy intensity and CO<sub>2</sub> emission intensity. We maintained our achievement of zero emissions,<sup>1</sup> and our emissions of substances subject to the PRTR Law declined by 30% compared with the results for fiscal 2005.

In the area of occupational health and safety, we experienced two injuries with loss of workdays<sup>2</sup> and four injuries without loss of workdays.<sup>3</sup> In the areas of process safety and disaster prevention as well as chemical safety and quality, we encountered no facility disasters or accidents<sup>4</sup> and no chemical problems or serious customer complaints<sup>5</sup> during the period.

Evaluation: 😊 Achieved 😐 Partially Achieved 😞 Not Achieved

	7th Medium-term RC Promotion Basic Plan (Fiscal 2010–12)	Results for Fiscal 2011	Self-evaluation
Environmental Protection	<ul style="list-style-type: none"> <li>To reduce energy intensity by 20% compared with the level of fiscal 1990. Planned value for fiscal 2011: 19.3%</li> <li>To reduce CO<sub>2</sub> emission intensity by 23% compared with the level of fiscal 1990. Planned value for fiscal 2011: 22.1%</li> <li>To maintain zero emissions</li> <li>Emissions of substances subject to the PRTR Law: 77.5 tons/year (Reduced by 50% from fiscal 2005 levels.)</li> </ul>	<ul style="list-style-type: none"> <li>Reduced energy intensity by 22.1%.</li> <li>Reduced CO<sub>2</sub> emission intensity by 27.9%.</li> <li>Zero emissions maintained.</li> <li>Emissions of substances subject to the PRTR Law: 108 tons (Reduced by 30%.)</li> </ul>	😞
Process Safety and Disaster Prevention	<ul style="list-style-type: none"> <li>Zero facility disasters</li> <li>Zero facility accidents</li> </ul>	<ul style="list-style-type: none"> <li>Zero facility disasters occurred.</li> <li>Zero facility accidents occurred.</li> </ul>	😊
Occupational Safety and Health (including contractors)	<ul style="list-style-type: none"> <li>Zero injuries with loss of workdays</li> <li>Zero injuries without loss of workdays</li> </ul>	<ul style="list-style-type: none"> <li>Two injuries with loss of workdays occurred.</li> <li>Four injuries without loss of workdays occurred.</li> </ul>	😞
Chemical Safety	<ul style="list-style-type: none"> <li>Zero problems related to chemical safety (legal or social problems)</li> </ul>	<ul style="list-style-type: none"> <li>Zero problems related to chemical safety occurred.</li> </ul>	😊
Quality	<ul style="list-style-type: none"> <li>Zero serious customer complaints</li> <li>Zero quality nonconformities<sup>5</sup></li> </ul>	<ul style="list-style-type: none"> <li>Zero serious customer complaints were filed.</li> <li>One quality nonconformity was discovered.</li> </ul>	😞
Communication with Society	<ul style="list-style-type: none"> <li>To maintain a dialogue with stakeholders and implement reasonable information disclosure</li> </ul>	<ul style="list-style-type: none"> <li>The Kawasaki Plant participated in community dialogue and the like.</li> </ul>	😞
Developing RC among Our Group Companies <sup>6</sup>	Measures Common to Our Group Companies (1) Environmental Protection <ul style="list-style-type: none"> <li>To reduce energy intensity</li> <li>To reduce final disposal at off-site landfills (group companies in Japan)</li> <li>To reduce the amount of waste (group companies outside Japan)</li> <li>To reduce emissions of substances subject to the PRTR Law</li> </ul> (2) Process Safety and Disaster Prevention <ul style="list-style-type: none"> <li>To achieve zero facility disasters and zero facility accidents</li> </ul> (3) Occupational Safety and Health <ul style="list-style-type: none"> <li>To achieve zero injuries with loss of workdays</li> </ul> (4) Chemical Safety <ul style="list-style-type: none"> <li>To achieve zero problems related to chemical safety (legal or social problems)</li> </ul> (5) Quality <ul style="list-style-type: none"> <li>To receive zero serious customer complaints</li> </ul> (6) Communication with Society <ul style="list-style-type: none"> <li>To maintain a dialogue with stakeholders and implement reasonable information disclosure</li> </ul> (7) Management System <ul style="list-style-type: none"> <li>To effectively manage risk assessments through EMS and OSHMS</li> </ul>	<ul style="list-style-type: none"> <li>Two of seven group companies in Japan reduced their energy intensity.</li> <li>Waste subject to final disposal at off-site landfills was reduced by 5% compared with the level of the previous fiscal year.</li> <li>Emissions of substances subject to the PRTR Law increased by 11% compared with the level of the previous fiscal year (group companies in Japan).</li> <li>One facility disaster occurred. • Zero facility accidents occurred.</li> <li>Four injuries with loss of workdays occurred.</li> <li>Zero problems related to chemical safety occurred.</li> <li>One serious customer complaint was filed.</li> <li>Published an Environmental Report and participated in community events (group companies in Japan).</li> <li>EMS: All group companies have already introduced an EMS.</li> <li>Risk assessment: All group companies have already introduced risk assessments.</li> </ul>	

Definitions: <sup>1</sup> Zero emissions: Reducing the quantity of waste subject to final disposal at off-site landfills to less than 0.1% of the total amount of waste generated (In the calculation of total waste, the amount of sludge subject to activated sludge treatment is calculated before dehydration.)

<sup>2</sup> Injury with loss of workdays: Injury requiring at least one lost workday for medical treatment

<sup>3</sup> Injury without loss of workdays: Injury requiring no loss of workdays for medical treatment

<sup>4</sup> Facility accident: Any problem accompanied by at least a two-day shutdown but with no impact on any third party

<sup>5</sup> According to company standard <sup>6</sup> Refers to group companies inside and outside Japan, unless otherwise specified.

### Responsible Care Audits

A committee comprising members of top management conducts annual RC audits at each plant. These audits are intended to improve the activities and priority themes of Responsible Care. In fiscal 2011, the 39th annual audit was conducted on the theme of "initiatives to prevent industrial accidents." The audit results are reported to the RC Promotion

Committee under the chairmanship of the company president, and each plant drafts an improvement plan targeting the issues identified and implements the activities required to correct them. The results of the response are reported during the RC audit conducted the following fiscal year. The priorities for the preceding five years are shown in the following table.

Fiscal Year	Priorities
2007	Initiatives to improve the safety culture
2008	Initiatives to prevent accidents and the spread of damage
2009	Initiatives to pass on technologies and enhance our approach to change management
2010	Initiatives to prevent explosions and fires at chemical plants
2011	Initiatives to prevent industrial accidents

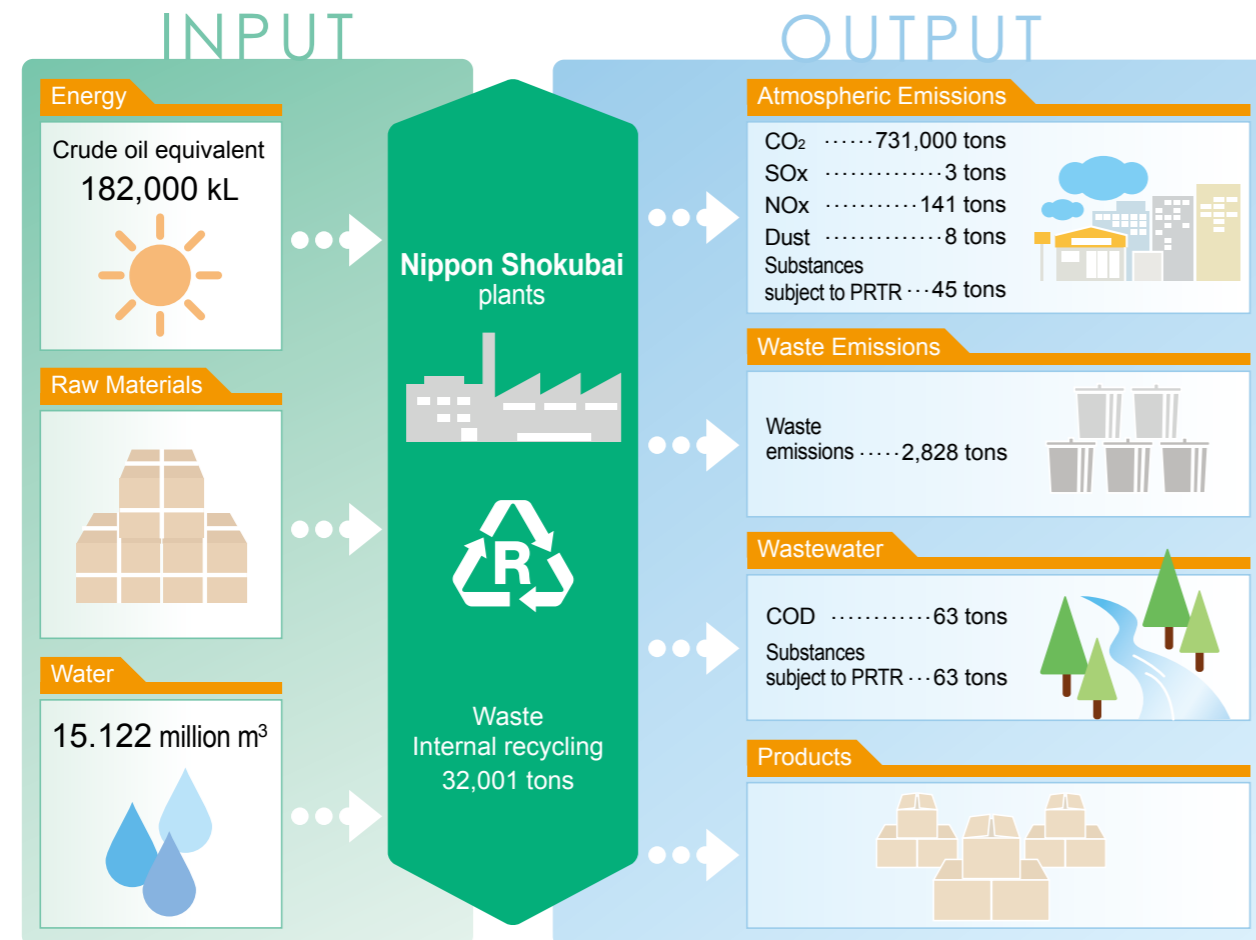


RC audit



### Environmental Impacts of Our Business Operations

We are engaged in various initiatives to reduce the environmental impacts of our business operations and to provide better products and services.



#### RC Training

We provide our employees with RC training with the goals of improving the knowledge base and raising awareness of Responsible Care.

In fiscal 2011, the Responsible Care Division of our head office provided this training to newly assigned managers and to mid-level employees at research centers. This training focused on an overview of Responsible Care as well as the roles of managers and supervisors in implementing Responsible Care. In addition, beginning in fiscal 2008 we included lectures on Responsible Care as part of our training for new employees; we implemented this for fiscal 2011 as well.



RC training of newly assigned managers

#### Introducing Responsible Care to the Local Community

We participated in dialogues with members of the local community held by the Responsible Care Committee (formerly the Japan Responsible Care Council) of the Japan Chemical Industry Association. We introduced our RC activities to the participants of government, NPOs, industry associations, corporations, and the community associations that are located at each plant. We have also taken steps to further enhance mutual understanding through increased communication.

In fiscal 2011, our Kawasaki Plant introduced RC activities in the district of Kawasaki.



Dialogue with the local community

### Initiatives for Preventing Global Warming

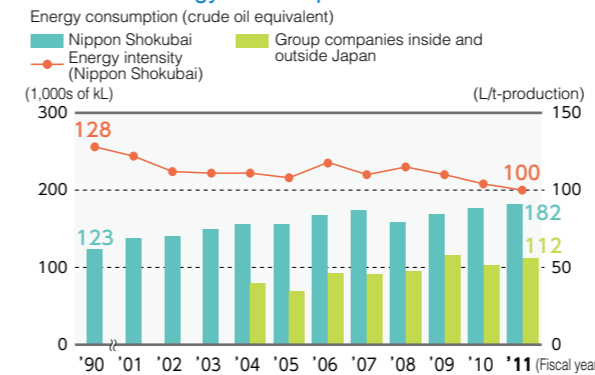
#### Promoting Energy Efficiency

In an effort to achieve the goals of the Kyoto Protocol, the Japan Chemical Industry Association has set targets to reduce the chemical industry's energy consumption rate per unit of production ("energy intensity") to 80% of the fiscal 1990 level as an average value for the period fiscal 2008–12. Nippon Shokubai has adopted a target for CO<sub>2</sub> emissions per unit of production ("emission intensity") as

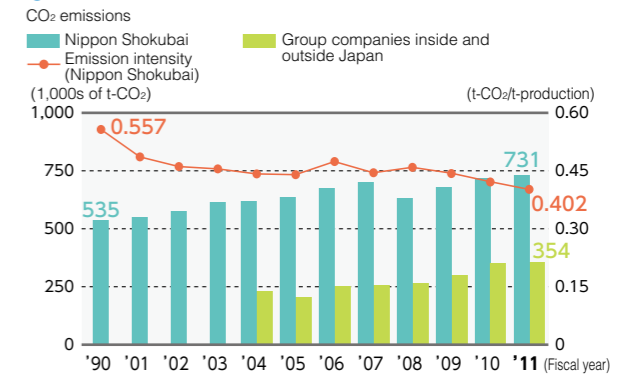
well as energy intensity by taking into account the Kyoto Protocol's target for reduction of CO<sub>2</sub> emissions. Each of our plants has been focusing on energy efficiency initiatives in order to reduce our CO<sub>2</sub> emissions.

In fiscal 2011, we succeeded in reducing our energy intensity by 22.1% and our CO<sub>2</sub> emission intensity by 27.9% from the fiscal 1990 levels.

#### Trend in Energy Consumption



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



\*Excludes head office, research centers, plant administration buildings and employee welfare facilities.  
\*The amount of energy consumed and CO<sub>2</sub> emissions in fiscal 2011 totaled 3,400 kiloliters and 5,000 tons, respectively, for the head office, research centers, plant administration buildings, and employee welfare facilities of Nippon Shokubai.

#### Interview



**Responding to power usage limits through visualization of our power consumption**

Masaki Kitano  
Production Planning & Administration Center  
Kawasaki Plant

To accommodate restrictions on the consumption of electric power by large consumers in the aftermath of the Great East Japan Earthquake, the relevant departments of our company collaborated in the development of a system that constantly monitors the amount of power we consume. With this system — which displays a combined value every 30 minutes in addition to predicting the amount of power used per minute — the Production Planning & Administration Center can manage the total amount of power consumed by the plant. If the power consumption appears likely to exceed the set value, an audible alarm is generated on the production floor.

This innovation enabled us to respond to ever-changing daily targets and thus contributed to the avoidance of rolling blackouts.

#### In Focus

#### Aqua Guard® is expected to contribute to the avoidance of CO<sub>2</sub> emissions.

Aqua Guard® was developed to reduce the cracking and spalling of concrete. The combination of Aqua Guard® with a high-range water reducer for concrete can be expected to help concrete structures maintain their strength for a longer period of time. Calculated with the c-LCA (carbon life-cycle analysis) technique, a long-lived apartment building incorporating this innovation can be expected to avoid CO<sub>2</sub> emissions throughout the entire lifecycle compared to a standard apartment building.

**CO<sub>2</sub> emissions avoided throughout the building life cycle: 3.4 million tons**

( Calculated CO<sub>2</sub> emissions avoided in one year if all apartments were built as long-lived structures )

#### Notes:

- The c-LCA compares CO<sub>2</sub> emissions throughout the life cycle of apartments that incorporate and those that do not incorporate the chemical products mentioned.
- The emissions avoided are calculated as the net amount of emissions avoided as a result of the use of these chemical products.
- The life cycle assessment assumes a long-life apartment has a 100-year service life, while a normal apartment has a 50-year service life.
- CO<sub>2</sub> emissions associated with the production, use, and disposal of the apartment were evaluated with reference to the "Guidelines for LCA for Buildings" (third edition, 2006) published by the Architectural Institute of Japan.
- Calculations refer to the number of units of apartment buildings as of 2010.
- The service life indicated above is not guaranteed; the service life is an assumed value only.



Initiatives for Eco-friendly Distribution

Promoting modal shift

As a global warming countermeasure in our logistics operations, we are implementing an emissions control plan in an effort to control air pollution and reduce CO<sub>2</sub> emission intensity.

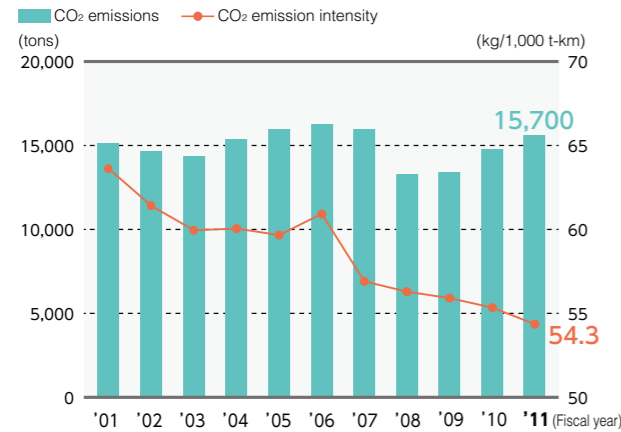
Although changing economic conditions can affect the amount of goods we ship and our CO<sub>2</sub> emissions, we are implementing initiatives to reduce CO<sub>2</sub> emission intensity. These include modal shift, improved transport efficiency, introduction of digital tachometers (including GPS and drive recorders), and energy-efficient vehicle operation such as minimized idling and the installation of energy-efficient tires. Furthermore, we are accommodating environmental considerations by increasing the use of tank containers

adaptable to rail transport in response to the increased shipping volume of ethylene oxide, our main product line.

As an air pollution control measure, we adopted the Kawasaki Eco-Transport System\* (effective April 1, 2010) and began promoting three initiatives: eco-friendly driving and display of "eco-drive" stickers; elimination of vehicles that do not comply with laws regulating NO<sub>x</sub> and PM emissions; and widespread adoption of low-emission and energy-efficient vehicles.

\*An environmentally friendly transportation system established with the partial amendment of the "Kawasaki City Ordinance for Conservation of Life Environment, including Pollution Prevention."

Trend in CO<sub>2</sub> Emissions and Emission Intensity Attributable to Domestic Logistics



We increased the use of container cargo packing equipment and rail transport containers for ethylene oxide, our main product line.



Sticker of the Kawasaki Eco-Transport System



Increased use of compliant low-emission vehicles at Nishshoku Butsuryu Co., Ltd.

In Focus

Nippon Shokubai achieves highest DBJ environmental rating and disaster preparedness rating.

The Development Bank of Japan Inc. (DBJ) awarded Nippon Shokubai the highest DBJ ratings for environmentally responsible management and disaster preparedness. We were the first chemical manufacturer to achieve these rankings at the same time. As a result, we obtained a ¥5 billion syndicated loan as a capital investment loan.

DBJ developed the world's first screening system for financing that employs the DBJ environmental and DBJ disaster preparedness ratings. This system allows for evaluation of corporate environmental management, disaster preparedness, and business continuity initiatives. By identifying outstanding companies, the evaluation is helpful in establishing loan conditions.



**Modal Shift** By changing our shipping method toward bulk transport using railways and ships, we are optimizing our transport method to conserve energy and reduce our environmental impact.

Pollution Control Initiatives Targeting Air and Water

We introduced a high-performance activated sludge treatment system to accommodate increased production capacity and ensure consistent treatment.

To control air pollution, we are taking steps to reduce byproduct oil and consumption of fuel oil. At the same time, we are converting fuel sources to natural gas while monitoring our emissions of SO<sub>x</sub>, NO<sub>x</sub> and dust.

In addressing water pollution control, we are endeavoring to reduce the environmental impact (reduction in chemical oxygen demand, or COD) of our wastewater by

recovering wastewater from the production process and reusing it. We have also installed an activated sludge treatment system and a waste liquid combustion furnace.

In addition, in fiscal 2009 we introduced a high-performance activated sludge treatment system to ensure stable treatment of high COD loads.

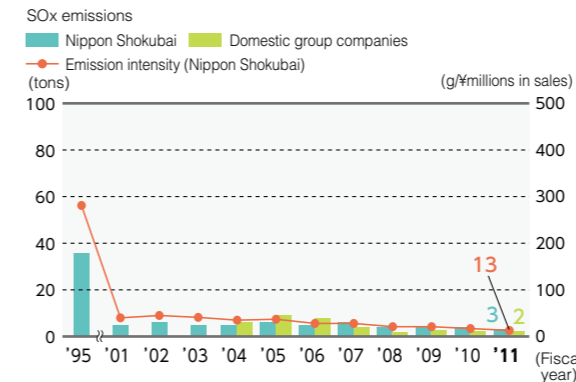


Activated sludge treatment system

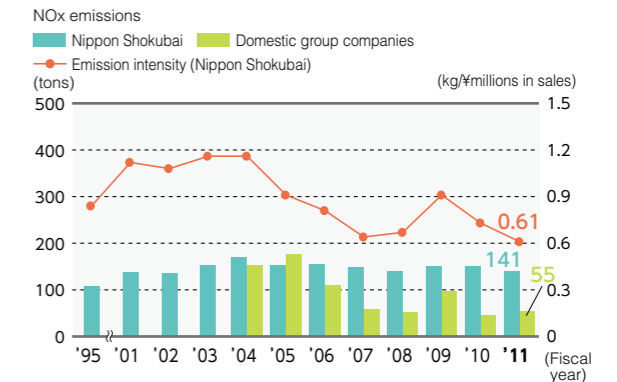


Waste liquid combustion furnace

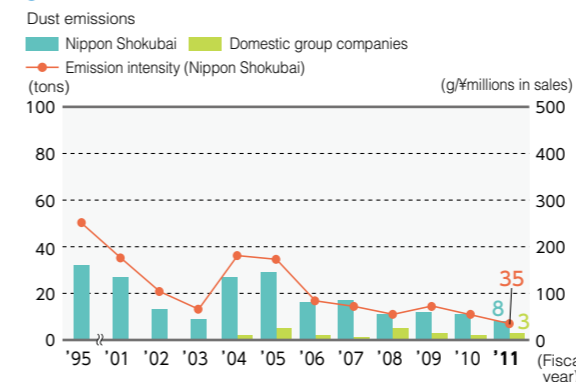
Trend in SO<sub>x</sub> Emissions



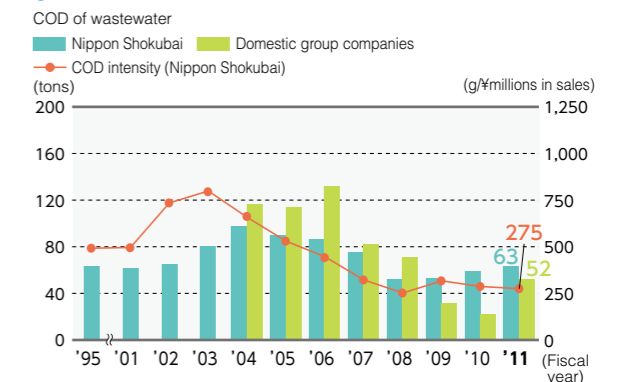
Trend in NO<sub>x</sub> Emissions



Trend in Dust Emissions



Trend in COD of Wastewater



Note: Regarding the values agreed to by the city and prefecture, SO<sub>x</sub> emissions total 1/50th and dust emissions total 1/10th. NO<sub>x</sub> and COD totals are below the agreed values.

<p><b>SO<sub>x</sub></b> A hazardous air pollutant. This is a general term for sulfur oxides such as sulfur dioxide (SO<sub>2</sub>) and sulfur trioxide (SO<sub>3</sub>), which are generated mainly from the burning of fossil fuels.</p>	<p><b>NO<sub>x</sub></b> A general term for nitrogen oxides such as nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). These substances contribute to acid rain and photochemical smog.</p>	<p><b>Dust</b> Fine particles generated through incineration of materials and other processes</p>	<p><b>COD (Chemical Oxygen Demand)</b> An index of water pollution caused by an organic substance. It represents the volume of oxygen consumed when an organic substance is oxidized.</p>
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Waste Reduction Initiatives

**We are striving to reduce the amount of waste subject to final disposal at off-site landfills.**

Addressing waste reduction is a necessary initiative to support the emergence of a society committed to recycling. By achieving and continuing our initiative toward zero emissions (defined as "reducing the quantity of waste subject to final disposal at off-site landfills to less than 0.1% of total amount of waste generated"), we are promoting the sorting for recovery and recycling of our waste.

In fiscal 2011, we continued to implement our zero emissions policy by reducing the amount of waste subject to final disposal at off-site landfills through on-site treatment of production residues and by implementing thorough sorting for recovery and recycling.

Interview

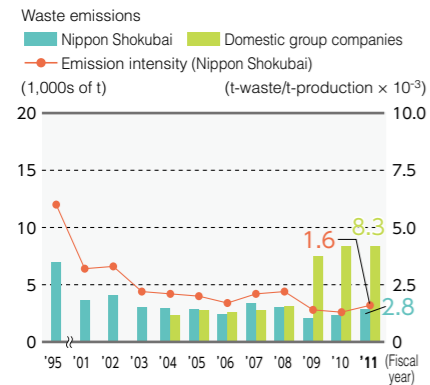


**We're reducing environmental impacts through catalytic treatment of exhaust gas.**

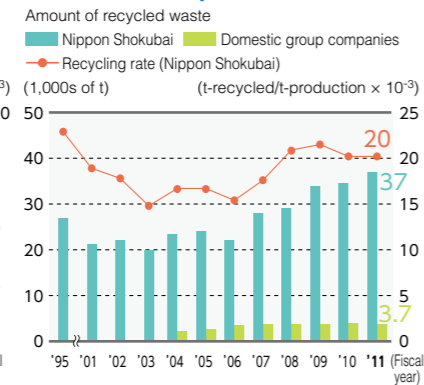
Manabu Watanabe  
Production Section, Suita Plant

The Suita Plant produces acrylic resins for paints and adhesives. Conventionally, we have used organic solvents subject to the PRTR Law in the production process. We managed them carefully, but some were released into the atmosphere. As a result of intensive studies to minimize the environmental impact of our Production Section, we were able to reduce conventional emissions to one-sixth of previous levels through catalytic combustion of the exhaust gas and through innovative operating conditions.

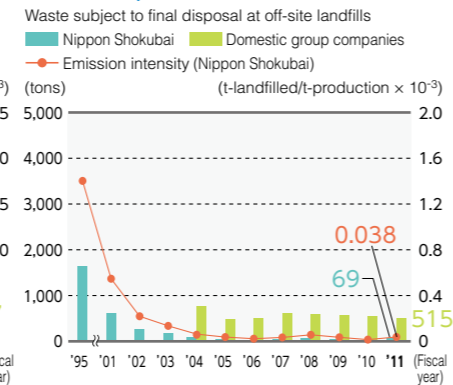
Trend in Waste Emissions



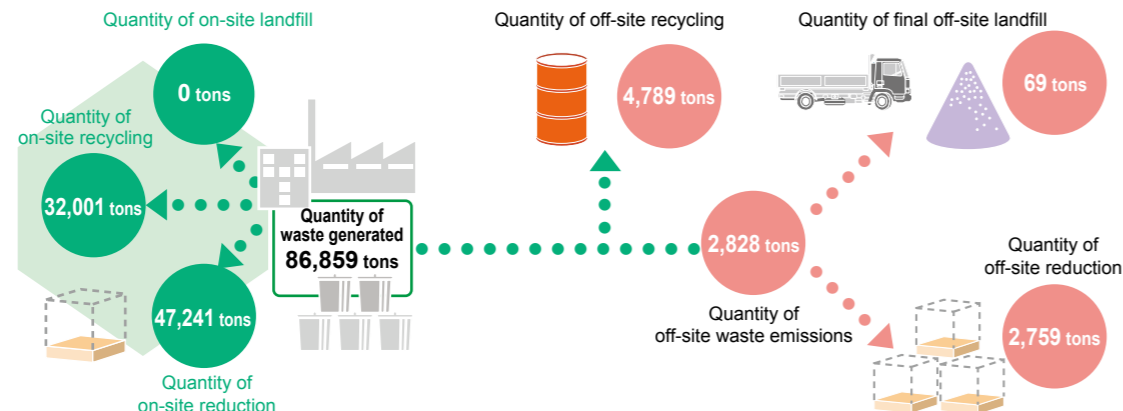
Trend in Amount of Recycled Waste



Trend in Amount of Waste Subject to Final Disposal at Off-site Landfills



Waste Flowchart



Chemical Substances Control Initiative

**We are focused on reducing our chemical emissions.**

In 1995, we participated in a voluntary PRTR survey undertaken by the Japan Chemical Industry Association and have set out to reduce our emissions of chemical substances into the environment.

In fiscal 2011, we released 108 tons of chemical substances, which represents a 30% decrease in emissions compared to fiscal 2005 levels. We remain focused on further reducing emissions toward our fiscal 2012 target of a 50% reduction from fiscal 2005 levels.



Acrylic acid absorption system



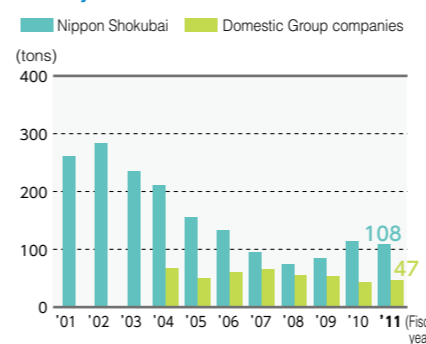
Flue gas treatment system

Top 10 Substances Subject to the PRTR Released in Fiscal 2011

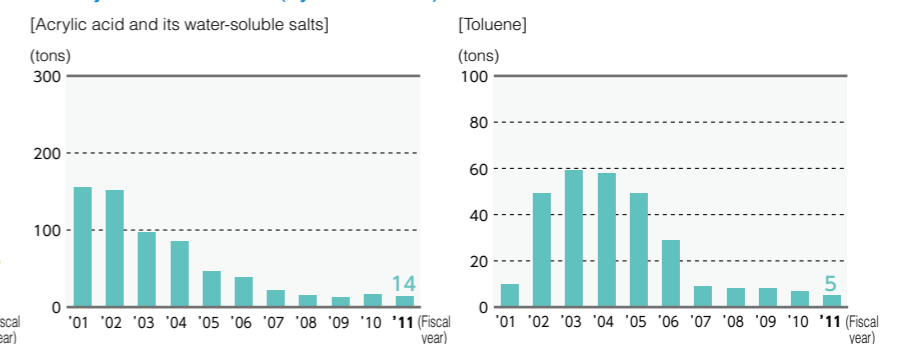
No.	Government Designation No.	Substance Subject to PRTR	Released into Atmosphere	Released into Water	Total Emissions
1	405	Boron compounds	0.0	38.3	38.3
2	4	Acrylic acid and its water-soluble salts*	12.6	1.7	14.3
3	56	Ethylene oxide	10.3	0.0	10.3
4	321	Vanadium compounds	0.0	9.6	9.6
5	150	1,4-dioxane	0.0	7.6	7.6
6	300	Toluene	5.1	0.0	5.1
7	58	Ethylene glycol monomethyl ether	3.6	0.0	3.6
8	80	Xylene	3.4	0.0	3.4
9	400	Benzene	2.5	0.0	2.5
10	20	2-aminoethanol	0.0	1.4	1.4

\* In fiscal 2010, acrylic acid water-soluble salts, vanadium compounds, and other substances were included in the PRTR.

Trend in Emissions of Substances Subject to the PRTR



Trend in Emissions of Substances Subject to the PRTR (by Substance)



**PRTR (Pollutant Release and Transfer Register)** A regulatory system that requires the reporting of emissions of designated chemical substances into the air, water and soil as well as the volume of waste transferred. Data compiled and submitted to governmental agencies are disclosed to the public.



### Environmental Accounting

The values determined in our environmental accounting were aggregated according to the *Environmental Accounting Guidelines* published in 2000 by the Ministry of the Environment of Japan and the *Environmental Accounting Guidelines for the Chemical Industry* published in 2003 by the Japan Chemical Industry Association and the Japan Responsible Care Council. We also made reference to the 2007 Edition of the *Environmental Accounting Guidelines* published by the Ministry of the Environment of Japan.

● **Environmental Protection Costs & Environmental Protection Benefits** Applicable period: April 1, 2011–March 31, 2012 Scope: Nippon Shokubai (nonconsolidated) (millions of yen)

Classification	Main Initiatives	Amount Invested	Expenses	Effects	Relevant Page
Environmental protection cost related to control of the environmental impacts of our production and service business operations (Business area cost)	1. Pollution Control Cost	94	1,978	No pollution problems occurred.	P17, 19
	2. Global Environmental Protection Cost	7	1,988	Energy efficiency efforts resulted in a 22% reduction in energy intensity from fiscal 1990 level. • Energy intensity Fiscal 2010: 104 L/t (19% reduction) → Fiscal 2011: 100 L/t (22% reduction)	P15
	3. Resource Recycling Cost	43	280	We achieved zero emissions by sorting and recycling our solid waste. • Amount of waste subject to final disposal at off-site landfills Fiscal 2010: 26 tons → Fiscal 2011: 69 tons	P18
Cost of controlling the environmental impacts of production and service operations occurring upstream & downstream (Upstream/downstream cost)	Reuse of drum containers	0	22	Some of drum containers are reused.	—
Environmental protection cost related to management activities (Environmental management cost)	Operation of environmental structure; acquisition and maintenance of ISO 14001 registration	0	440	Having acquired ISO 14001 registration at all plants, we plan to enhance our environmental management systems.	—
Environmental protection cost related to R&D activities (R&D cost)	Reduction of the environmental impact through development and manufacturing of green products	0	1,799	Conducting R&D of catalysts for treating wastewater containing organic substance(s) and catalysts for dioxin decomposition	—
Environmental protection cost related to social activities (Social activity cost)	Environmental-related contributions	0	44	Forest development initiatives	P8
Cost of dealing with environmental remediation (Environmental damage cost)	—	0	7	—	—
<b>Total</b>		<b>144</b>	<b>6,557</b>		

● **Reference**

Total investment for the period: 9,617 million yen  
Total R&D expenses for the period: 11,366 million yen

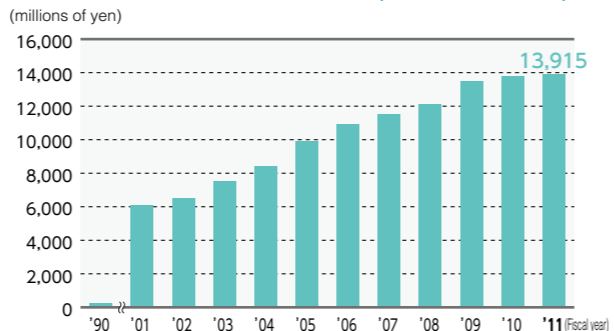
● **Economic Effects (Monetary Benefits) Resulting from Environmental Protection Initiatives** (millions of yen)

Effect	Amount
Income	6
Cost saving	734
	1,398
<b>Total</b>	<b>2,138</b>

### Environmental Investment

Every year, we actively invest in environmental protection measures. Beginning in fiscal 1990, we began to calculate our total investment in environmental protection.

● **Total Environmental Investment (since fiscal 1990)** (millions of yen)



**Environmental Accounting**

This system collects and analyzes the costs and effectiveness of environmental protection in business activities, quantitatively and to the maximum extent, and makes the data available to the public. It is focused on sustainable development for companies with the goal of efficiently and effectively promoting environmental protection initiatives while maintaining a good relationship with society.

### Basic Approach to Safety Issues

We recognized early on that our company could not achieve sustainable development without ensuring safety and earning the trust of the community. In 1973, we adopted our corporate credo — “safety takes priority over production” — and developed a policy regarding safety management. We also incorporated Safety Management Regulations into our corporate regulations.

Senior management clearly demonstrates a commitment to safety, carefully monitors actual conditions, and issues necessary instructions to ensure safety.

We have been developing a consensus among all our employees that ensuring safety is our top priority in keeping with our corporate credo.



### Achieving Zero Accidents and Disasters (Promotion of Voluntary Safety Initiatives)

Since our company was established, we have been employing our own proprietary technology in our production operations. This has enabled us to gain much technical knowledge regarding the risks specific to certain processes from the development stage. We are applying the knowledge thus gained during plant construction and the like and are promoting voluntary safety initiatives.

■ **Achieving Continuous Improvement with a Safety Management System**

In an effort to more thoroughly visualize our safety initiatives and promote continuous improvement, we introduced plans to implement a safety management system at all our plants. Under this system, we have been steadily upgrading safety management by formulating our safety management plan and related goals, implementing the plan, and assessing the system, all in a cyclical manner.

■ **Assessing the Safety of Facilities**

In order to prevent accidents and disasters, we conduct risk assessments when undertaking new construction, expansion, and remodeling of facilities, or when changing work procedures. In fiscal 2001, we began employing HAZOP and other methods when re-evaluating existing plants to ensure safety.

■ **High-Pressure Gas Safety Certification Acquired**

In recognition of their compliance with the provisions of the High Pressure Gas Safety Act, the seven facilities of the Chidori Plant and the six facilities of the Ukishima Plant in our Kawasaki Plant have been recognized by the Ministry of Economy, Trade and Industry as “Certified Completion Inspector and Certified Safety Inspector” under the provisions of the High Pressure Gas Safety Act. This certification enables us to conduct self-administered safety and self-completion inspections on these plants. Recertification may be undertaken every five years. In fiscal 2011, we applied for certification of another facility at our Ukishima Plant.

■ **Trend in the Number of Facility Disasters**

Fiscal year	'07	'08	'09	'10	'11
Number of disasters	0	0	0	0	0

■ **Implementation of Various Emergency Drills**

We have established an emergency response system at each plant in order to minimize damage in the event of an emergency and are systematically conducting various emergency drills. We are steadily improving our emergency response system by evaluating the results of the drill, addressing any challenges encountered, and reflecting changes in subsequent drills.



Emergency response drills

**HAZOP (Hazard and Operability Study)**

A safety evaluation method for systematically evaluating the adequacy of safeguards in plants and eliminating latent risks in plants through comprehensive detection.

■ **Earthquake Preparedness**

Following the Great Hanshin-Awaji Earthquake, we conducted a review of earthquake countermeasures in fiscal 1995. In light of the Great East Japan Earthquake, we reviewed earthquake preparedness with a focus on the potential for tsunamis and liquefaction. We will implement measures according to the plan in order to further improve safety from the perspective of both the tangible and intangible.

**Interview**



**We are working to establish a production base that is resistant to earthquakes.**

Mei Ota  
Engineering

I have been involved in civil engineering and construction at the Himeji Plant. In view of the Great East Japan Earthquake that occurred in March 2011, we have identified the urgent priority of taking measures against the potential for a Yamazaki fault earthquake and an interlinked earthquake on the Tokai-Tonankai-Nankai fault. We are involved in reinforcement work to minimize damage to revetments and bridges — the cornerstones of plant logistics — resulting from ground liquefaction and ground flows out to the coast. We will continue to work toward a safer and more secure manufacturing capability that can withstand potential disasters.

■ **Commendations**

- At the Hazardous Materials Safety Convention of the Osaka Association for Safety of Hazardous Materials, the Governor of Osaka awarded our Suita Plant with a letter of appreciation on the recommendation of the Suita Fire Department. This plant was recognized for its many years of safety and disaster preparedness initiatives.
- At the 3rd Safety Awards Ceremony sponsored by the Japan Petrochemical Industry Association, an employee of our Himeji Plant received an award for his accomplishments in safety activities at the plant.
- An employee of the Himeji Plant received the Chairperson's Commendation as an Excellent High-Pressure Gas Safety Supervisor at the 41st Hyogo Prefecture High Pressure Gas Safety Supervisor Convention. This employee was recognized for his many years of achievements in high-pressure gas safety.



Letter of appreciation from the Governor of Osaka



Commendation ceremony at a convention of professionals in charge of high-pressure gas safety



### Continuous Improvement through the Occupational Safety and Health Management System

In fiscal 2003, we introduced our Occupational Safety and Health Management System (OSHMS) and have been implementing it continuously since then. Using this system, we have been improving occupational safety and health by seeking to eradicate industrial accidents, reduce potential risk factors, and promote health and the creation of pleasant work environments.

Also, we are committed to achieving zero industrial accidents by systematically implementing "KY" (*kiken yochi*, or "risk prediction") campaigns, close-call incident (*hiyari hatto*) campaigns, our "5 S" campaigns, and a variety of drills and training classes.

#### On-site Training Sessions

We hold a variety of on-site training sessions at each plant with the intention of increasing our ability to predict the risks of on-site work. We offer hands-on training including first-aid; donning of safety belts; risks of working at height; valve opening and closing; flange disassembly and reassembly; and training in exposure to liquids, rotating machinery, and electrical hazards. Through this training, we are heightening our operators' sensitivity to risk.



Hands-on training with safety belts



Checking the centering of a pump



Training in electrical hazards



First aid training

#### KY Campaign

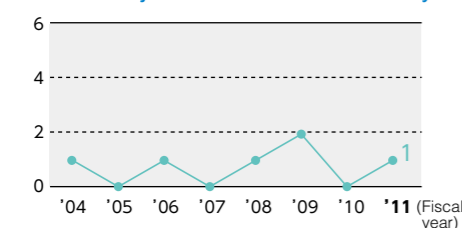
In an effort to prevent industrial accidents, we are committed to daily safety initiatives targeting work-related risks and have maintained a focus on our KY risk prediction campaign. We have been implementing group KY before work, KY for individual workers, and radio (Mobix) KY coordination between workers and the control room. Thus, we are enhancing our sensitivity to risk.

We also carry out systematic drills and KY-focused training, such as KY training with case sheets and holding KY workshops.

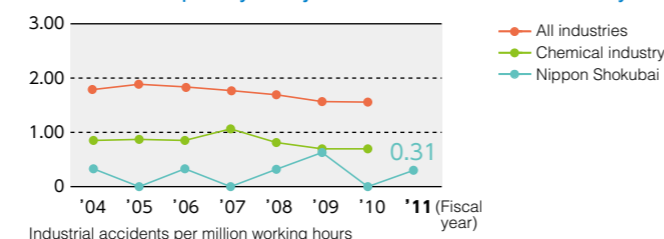
#### Occurrence of Industrial Accidents

In fiscal 2011, we had two injuries with loss of workdays and four injuries without loss of workdays; in addition, one of our contractors had an injury with loss of workdays. We are focused on preventing any recurrence through intramural support of comprehensive measures and by providing information at each plant.

##### Trend in Injuries with Loss of Workdays



##### Trend in Frequency of Injuries without Loss of Workdays



#### Intramural Exchange Program

In order to raise awareness of Responsible Care initiatives at all plants and enhance the skills of the next leaders of our production sites, we have been conducting an annual Intramural Exchange Program. In fiscal 2011, this program was held at our Himeji Plant. At the exchange meetings, the next leaders of the various production sites of our plants introduce examples of their workplace initiatives. They all take steps to expand their Responsible Care initiatives by discussing them and promoting interactions among participants.



Intramural Exchange Program

#### Commendations

The Ibaraki Labor Standard Association presented the Suita Plant with the Safety Activities Special Award for its ongoing accident-free record after we were awarded an Outstanding Safety Activities Prize.



### Addressing the Asbestos Issue

Since our establishment, we have never manufactured asbestos products; however, because we used insulation and sealing materials containing asbestos, we have handled asbestos on occasion. Therefore, we are contacting employees and retirees regarding health issues and are implementing a phase-out of parts containing asbestos.

In 2006 and 2009, we sent out information about asbestos-related medical examinations to retirees, offering them an annual medical examination at our expense. To date, a total of 71 retired employees have been issued a Health Check Note. Four persons were awarded industrial accident compensation benefits under the Industrial Accident Compensation Insurance Act. Two persons were awarded special compensation benefits for bereaved families under the Act on Asbestos Health Damage Relief. We will continue to support our retirees and employees with asbestos checkups in the future.

Information regarding medical examinations has been posted on our website ([www.shokubai.co.jp/ja/news/pdf/20090528.pdf](http://www.shokubai.co.jp/ja/news/pdf/20090528.pdf)).

Regarding substitutes for the asbestos contained in our products, we have adopted substitutes in cases where the asbestos was at risk of becoming airborne or wherever the potential existed for human contact with the product. As for other asbestos-containing parts, we are systematically phasing them out whenever the opportunity arises to update or replace these parts.

### Responsible Care Activities

#### Logistics Safety Initiatives

We are committed to improving our ability to respond by periodically conducting mock accident drills at all our plants that assume an accident on a transportation route. Through this effort, we are helping to prevent accidents during product shipments while minimizing damage should an accident occur.

Moreover, we installed GPS units in all tanker trucks transporting our ethylene oxide products. This initiative enables us to accurately monitor the locations of these trucks so that we, as the shipper, can promptly respond when required.

We conduct annual audits of the logistics safety of our distribution contractors and seek to achieve continuous improvements.



Disaster-response drill for shipping accidents occurring en route



Disaster-response drill for shipping accidents occurring en route

##### Close-call Incident (*Hiyari Hatto*) Campaign

Through this campaign, we are implementing safety measures in our day-to-day activities with a focus on our facilities and initiatives in order to clarify the reason for a close call and how we can avoid experiences involving similar tense or alarming occurrences that do not necessarily involve an accident.

##### KY (*Kiken Yochi* or Risk Prediction) Campaign

This campaign seeks to prevent accidents and disasters by identifying and correcting risk factors (unsafe behaviors or unsafe conditions) that are not readily apparent at the meeting or the like before work gets under way.

##### OSHMS (Occupational Safety and Health Management System)

This management system, undertaken in collaboration with workers, sets out the organization, responsibilities, practical issues, procedures, processes, and management resources required for business operators to continuously implement potential risk reduction in the area of safety and health. This management framework aims to improve workplace safety and health standards.

##### "5 S" Campaign

An activity promoting the "5 S" (*seiri, seiton, seiketsu, seisou* and *shitsuke*) targeting sorting, tidying, hygiene, cleaning, and discipline.



## Responsible Care Activities

### Chemical Safety Initiatives

We have established a Chemicals Total Management Committee and have implemented a variety of initiatives to work toward our goal of zero legal and social issues related to the chemical substances contained in products. This effort applies throughout the product life cycle from the R&D stage to disposal at the end of the product service life.

We are upgrading our internal systems across the global operations of our Group in order to comply with national and international laws and regulations related to chemical products. Moreover, we are committed to providing our customers with information on relevant laws and regulations as well as product safety information.

Additionally, we are implementing a comprehensive chemical management system that can respond quickly to risk assessments, issuance of MSDS, and surveys from customers querying us on the chemical content of our products. We are achieving this through centralized management of various types of information encompassing chemicals, raw materials, hazardous materials, and regulations.

#### Accommodating the REACH Regulation

Our Group manufactures, imports, and sells a variety of products in Europe, including superabsorbent polymer, and we carry numerous substances that are subject to REACH registration.

To expand our business under the terms of REACH, we are required to collect safety information, undertake risk evaluations, and register these substances. We are preparing to accommodate these requirements in collaboration with others in the same industry and throughout our supply chain. (Substances subject to the November 2010 registration deadline have all been registered.)

We will continue to promote such initiatives in order to ensure our Group in Europe remains in compliance with local laws and regulations.

#### Addressing Import/Export Controls

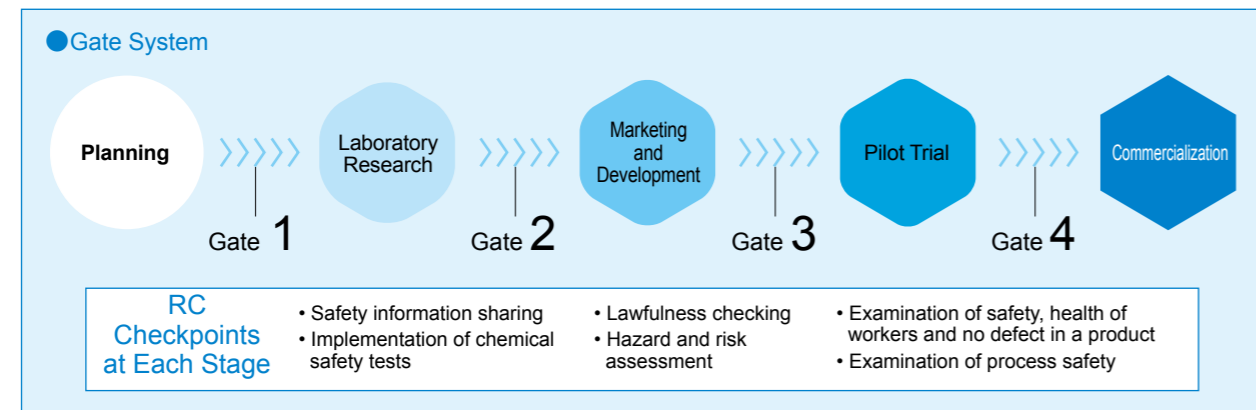
In order to ensure compliance with relevant laws and regulations regarding the import and export of our chemical products, we are promoting a variety of initiatives such as strengthening company regulations; determining whether a product is on a list subject to import/export restrictions; keeping our employees informed about whether a product has been listed as subject to import/export restrictions; recording applicable items on the MSDS; and improving our shipping management system for coordination with our enterprise resource planning (ERP) backbone accounting system. We also conduct regular internal training on import/export management.

#### Accommodating Laws and Regulations Applicable to New Chemical Substances

In collaboration with specialized institutions and our Group companies outside Japan, we are responding appropriately to the laws and regulations both within and outside Japan that require us to issue notifications of new chemical substances. These include the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. and the Industrial Safety and Health Act of Japan; the Toxic Substances Control Act (TSCA) of the U.S.A.; REACH; Provisions on the Environmental Administration of New Chemical Substances in China; and the Toxic Chemical Control Act of South Korea.

#### Ensuring the Safety of New Products

We have introduced a gate system at each stage from R&D to commercialization. In order to maintain safety throughout all processes including material procurement, processing, production, application, and disposal according to the terms of Responsible Care, at each stage we use technical expertise to determine whether to proceed to the next stage.



#### REACH

This European Union's chemical regulation is an acronym for Registration, Evaluation, Authorization and Restriction of Chemicals. While risk assessment of chemical substances had conventionally been carried at the initiative of administrative agencies, this responsibility was later transferred to companies. This legislative approach requires registrants (manufacturers and importers of chemicals) in the supply chain to assume the responsibility for maintaining human health and reducing environmental impacts. One of the objectives of this legislation is to strengthen the competitiveness of manufacturers within the EU.

#### Risk Assessment of Chemical Substances

Chemical risk assessment entails evaluation of the risk of various toxic hazards associated with chemical substances. Chemical manufacturers have the social responsibility to minimize the risk of chemical substances and are required to implement voluntary Responsible Care activities.

#### MSDS

The Material Safety Data Sheet lists a chemical's properties as well as data on its safety, transportation requirements, applicable laws, proper handling, and specific emergency response measures in a prescribed format. We compile an MSDS for each of the products we manufacture and develop, and we have implemented a system for distributing the latest versions to all employees through our MSDS-DB. In the future, we intend to compile a GHS-compatible version, an international version, and versions targeted to specific countries, such as an EU version and Chinese version.

#### Product Safety Initiatives

Our Product Safety Review Sub-committee verifies product safety, including compliance with the Product Liability Act. We prepare and inspect GHS-compliant warning labels, MSDSs, and Yellow Cards for the logistics sector and provide information to customers in real time while promoting training sessions for our employees.

#### Accommodating Green Procurement

For substances that are regulated or highly hazardous, we have independently assigned them to two categories: "prohibited substances (total ban on use)" and "restricted substances (handling restricted depending on product application)." We are promoting the development of green products and the procurement of raw materials with low environmental impact while determining and controlling the inclusion of such substances in our products. In response to customer requirements regarding the discontinuation and reduction of substances imparting an environmental burden, we are striving to eliminate these hazardous substances from our products and are disclosing appropriate information to customers.

Sample warning label



(for use outside Japan)



(for use within Japan)

GHS pictographs



## Responsible Care Activities

### Quality Assurance Initiatives

We give the highest priority to providing products and services that fully satisfy our customers while earning their trust through continuous quality improvement.



Quality control meeting

#### Customer Satisfaction Initiatives

To ensure our customers are satisfied with the exceptional and stable quality of our products and services, we promote quality assurance initiatives from the product development stage through to manufacturing and delivery. Accordingly, we are dedicated to ensuring continuous improvement of our quality management system through certification of registration with ISO 9001, the international standard for quality management system acquired by all our plants and all Group companies engaged in manufacturing and distribution both within and outside Japan.

#### Strengthening Our Quality Assurance System for Functional Products

With the increasing outsourcing of production items, we have been carrying out RC audits even on outsourced products in an effort to enhance the quality assurance of our functional products while also minimizing risks. Moreover, we conduct briefings to publicize audit procedures and provide tips on the content of Responsible Care as best we can, and are working to ensure efficient operations. Together, we undertake the selection of contractors and implementation of audits and are striving to maintain or even improve a quality assurance system targeting both our outsourced contractors and our in-house operations.

#### GHS

An abbreviation for Globally Harmonized System of Classification and Labeling of Chemicals, GHS reflects the risks and health and environmental hazards of chemicals determined in accordance with international standards. Under this system, products identified as presenting a risk or hazard are categorized according to test data and the information is displayed on labels on product packaging containers and in the respective MSDS. Countries in Europe and Asia have also introduced this system on the recommendation of the United Nations. This system is enforced in Japan through the Industrial Safety and Health Act.

#### Yellow Card

Carriers who transport hazardous materials and toxic substances must carry a yellow card for reporting information about their cargo to fire squads in the event of an accident. The yellow card lists a chemical's hazards, first aid procedures in an accident, and emergency contact information. As part of its promotion of Responsible Care, the Japan Chemical Industry Association prepares and manages guidelines on the procedures for preparing a yellow card in order to strengthen first aid measures in the event of an accident.

#### Green Procurement

This initiative responds to the national policy to promote the purchase of products and raw materials with reduced environmental impact through recycling and the like. This initiative guides companies in their purchase of raw materials and parts for products from suppliers to promote the preferential selection of products with the least environmental impact.

Himeji Plant



Kenji Rakutani, Plant Manager

Plant Outline

Plant Manager: Kenji Rakutani, Executive Officer  
 Location: 992-1 Aza-Nishioki, Okihama, Aboshi-ku, Himeji  
 Number of employees: 871 at the Himeji Plant;  
 167 at research centers in the Himeji district  
 Products: Acrylic acid, acrylates, maleic anhydride, superabsorbent polymers, resin modifier, electronic information materials, De-NOx catalyst, dioxins decomposition catalyst, and other products

Fiscal 2011 Results of RC Activities

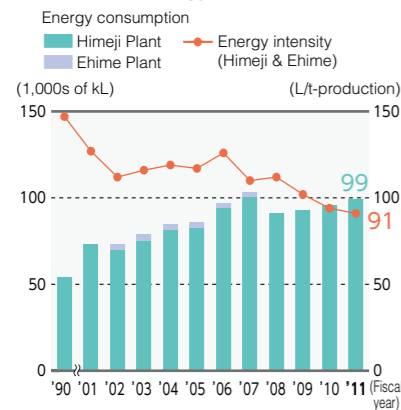
- We considered countermeasures for a large-scale earthquake. First, we undertook reinforcement work to minimize ground deviation toward the coast as well as liquefaction of the road revetment.
- We reduced our energy intensity by 2.7% and our CO<sub>2</sub> emission intensity by 3.3%, year-on-year.
- We reduced total emissions of substances subject to the PRTR by 20% relative to fiscal 2010 levels.
- Our employees suffered one injury with loss of workdays and one without loss of workdays, while one of our contractors suffered an injury with loss of workdays.

The Great East Japan Earthquake taught us many valuable lessons. Our plant used these lessons to reconsider its conventional earthquake countermeasures; therefore, we have decided to reinforce our structures, strengthen the maintenance of emergency equipment such as fire pumps, and undertake mitigation measures against the potential for ground liquefaction and tsunami damage. We have already begun to implement some of these measures.

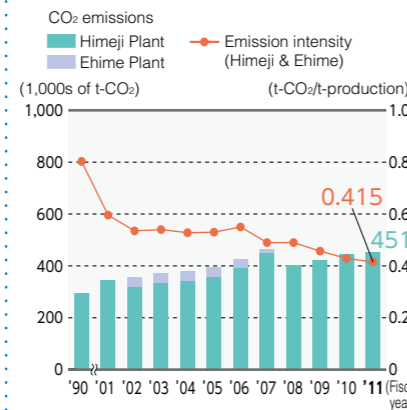
Regarding emissions of substances subject to the PRTR, we implemented measures to address one of the main sources of emissions and have reduced the total emissions of target substances by 20% compared to fiscal 2010 levels.

In the past few years, some industrial accidents have occurred in relation to our basic operations. With respect to occupational safety, we developed a plant safety manual that can be used for training in basic operations as well as on-the-job training. We also sought to enhance our close-call incident campaign and review accident case histories.

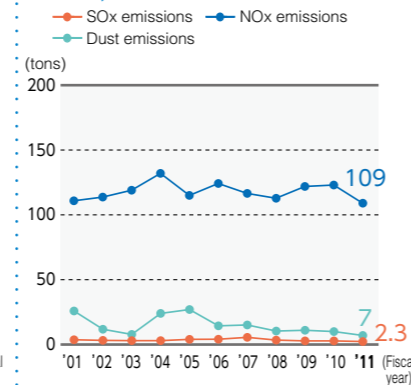
Trend in Energy Consumption



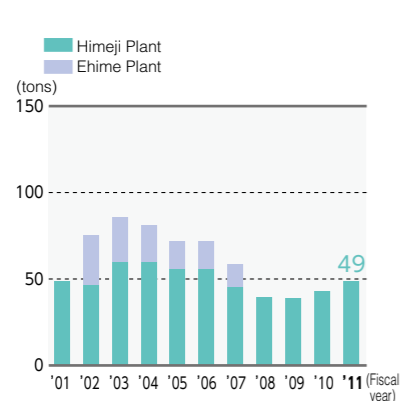
Trend in CO<sub>2</sub> Emissions



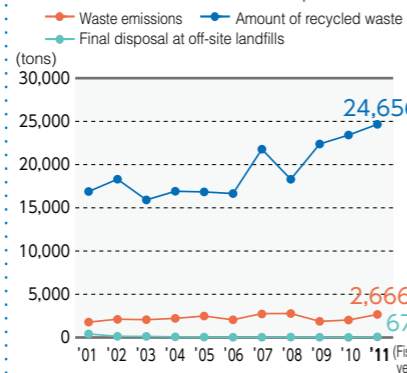
Trend in Emissions of SO<sub>x</sub>, NO<sub>x</sub>, and Dust



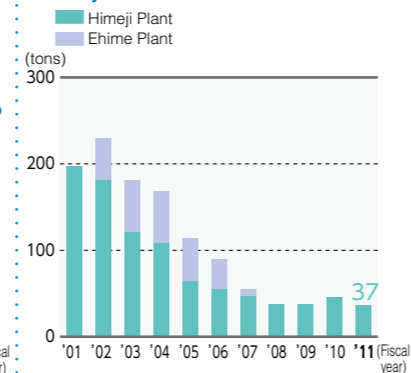
Trend in COD of Wastewater



Trend in Amount of Waste, Recycled Waste, and Waste for Final Landfill Disposal



Trend in Emissions of Substances Subject to the PRTR



As of fiscal 2007, the Ehime Plant stopped production.

Kawasaki Plant



Yujiro Goto, Plant Manager

Plant Outline

Plant Manager: Yujiro Goto  
 Location: Chidori Plant  
 14-1 Chidori-cho, Kawasaki-ku, Kawasaki  
 Ukishima Plant  
 10-12 Ukishima-cho, Kawasaki-ku, Kawasaki  
 Number of employees: 324 (including Research Center employees)  
 Products: Ethylene oxide, ethylene glycol, ethanolamine, higher-alcohol surfactants, polymers for concrete admixture, and other products

Fiscal 2011 Results of RC Activities

- Although we suffered no damage in the Great East Japan Earthquake, we adopted additional seismic countermeasures.
- We suffered three injuries without loss of workdays and took steps to improve facilities and protective equipment.
- We proceeded with our planned initiatives to increase energy efficiency and reduce our use of substances subject to the PRTR.

We suffered no facility damage at our plant as a result of the Great East Japan Earthquake that struck in March 2011, and we were able to continue with our operations. Nevertheless, we conducted a review of our tsunami and liquefaction countermeasures. Today, we continue to strengthen our process safety.

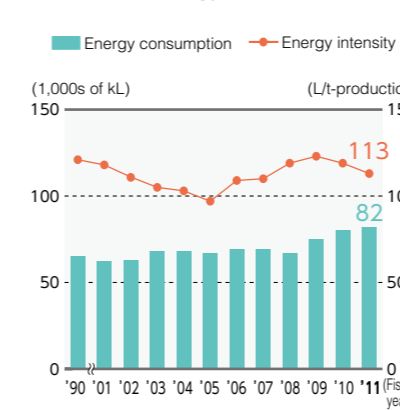
improving our facilities and protective equipment and conducting on-site training.

We adopted targets for increased energy efficiency and reduced use of substances subject to the PRTR and pursued them with a systematic approach.

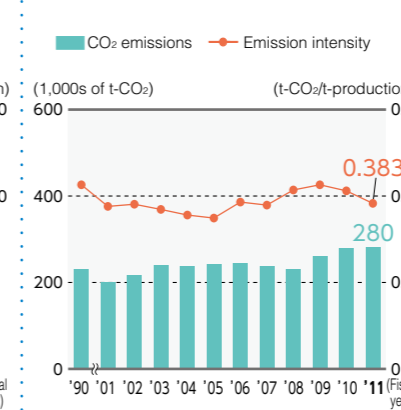
On the other hand, we suffered three injuries without loss of workdays. In response, we sought to enhance safety by

We will continue to promote RC activities with the goal of achieving a safe and reliable plant.

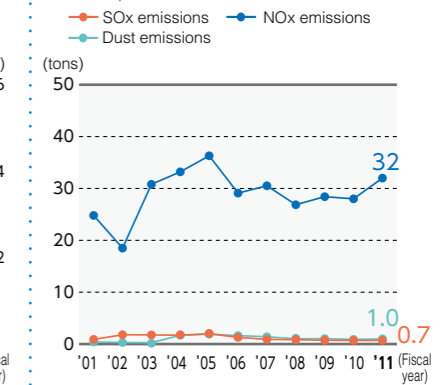
Trend in Energy Consumption



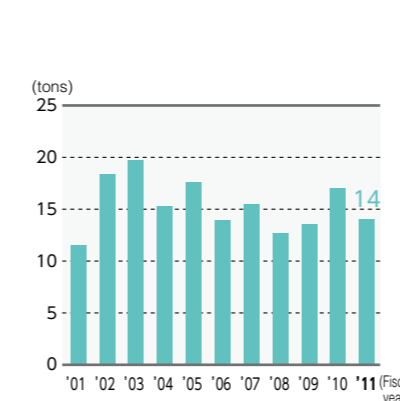
Trend in CO<sub>2</sub> Emissions



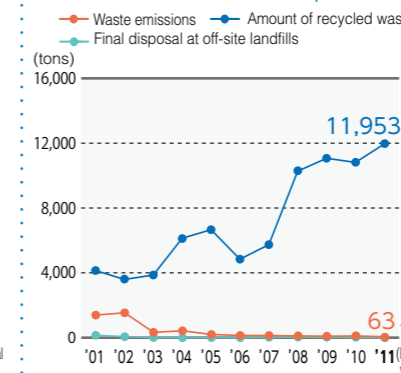
Trend in Emissions of SO<sub>x</sub>, NO<sub>x</sub>, and Dust



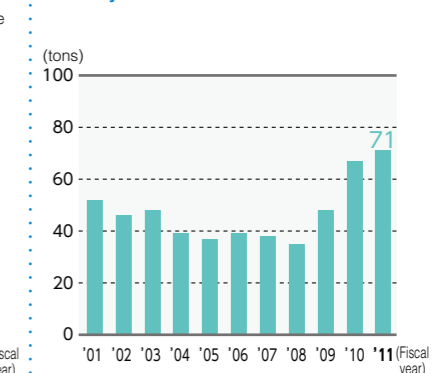
Trend in COD of Wastewater



Trend in Amount of Waste, Recycled Waste, and Waste for Final Landfill Disposal



Trend in Emissions of Substances Subject to the PRTR



In fiscal 2010, vanadium compounds were included in the PRTR.



Suita Plant



Hideyuki Nishibayashi, Plant Manager

Plant Outline

Plant Manager: Hideyuki Nishibayashi  
 Location: 5-8 Nishi Otobi-cho, Suita  
 Number of employees: 82  
 Products: Acrylic resins for adhesives, resins for paints, and other products

Fiscal 2011 Results of RC Activities

- We achieved zero industrial accidents, zero facility disasters, zero problems related to chemical safety, and zero serious quality complaints.
- We were able to reduce the emissions of PRTR substances.
- We reduced the volume of waste generated by promoting recovery of sorted waste.

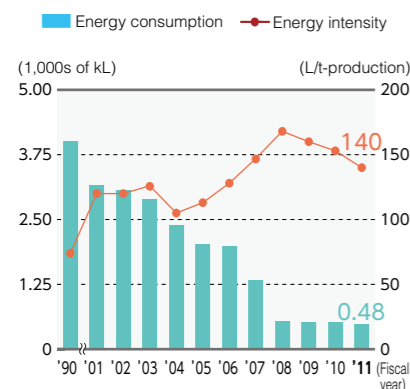
Continuing the performance we have demonstrated since fiscal 2007, the Suita Plant experienced zero industrial accidents and zero facility disasters. In this fiscal year, these efforts were recognized when the Ibaraki Labor Standards Association presented our plant with the Safety Activities Special Award, and the Governor of Osaka recognized our plant with a letter of appreciation as an outstanding hazardous materials plant. We will continue to work toward accident prevention through the steady adoption of various safety initiatives.

Among our environmental protection initiatives, we have been implementing ongoing steps to improve our recycling rate through intensive sorting of waste. This commitment had

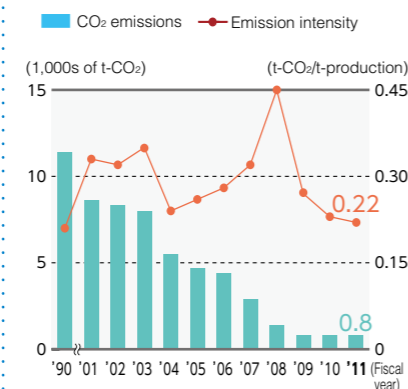
enabled us to reduce our waste emissions. Moreover, in fiscal 2011, we actively reduced our power consumption in response to power shortages in both summer and winter. This effort enabled us to reduce our CO<sub>2</sub> emissions as we curtailed our energy consumption.

As the plant is located in the midst of an urban area, we will continue to reduce our environmental impact in collaboration with our on-site research department, maintain our pursuit of our targets of zero accidents and disasters, and strive to gain the greater trust of the local community by supporting their peace of mind now and in the future.

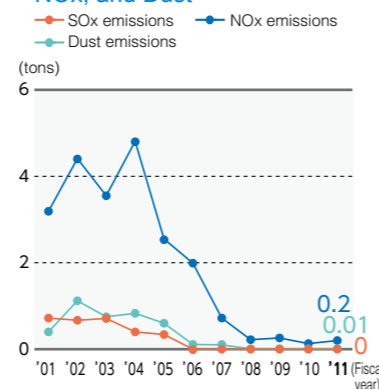
Trend in Energy Consumption



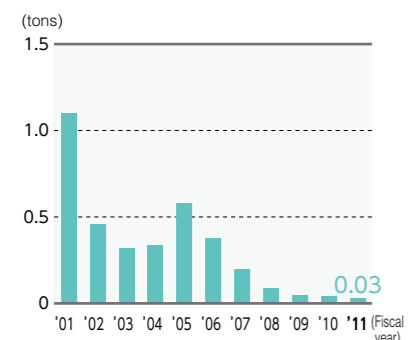
Trend in CO<sub>2</sub> Emissions



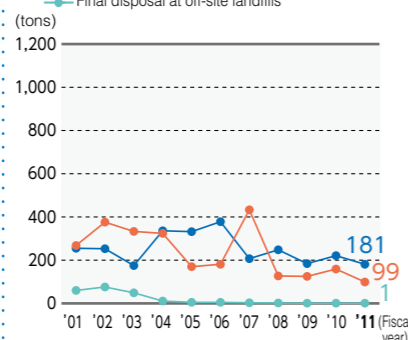
Trend in Emissions of SO<sub>x</sub>, NO<sub>x</sub>, and Dust



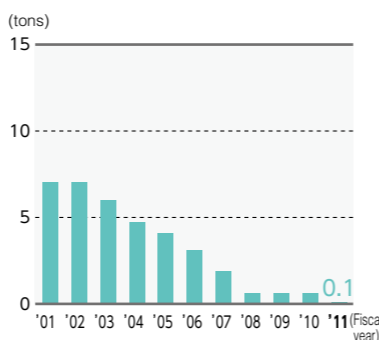
Trend in COD of Wastewater



Trend in Amount of Waste, Recycled Waste, and Waste for Final Landfill Disposal



Trend in Emissions of Substances Subject to the PRTR



RC Exchanges among Group Companies

RC Reciprocal Audits

In an effort to improve the RC activities of our Group companies in Japan, an organization of representatives of our Group companies in Japan undertakes annual reciprocal audits of all RC activities with two Group companies. In fiscal 2011, audits were conducted at Nippon Polymer Industries Co., Ltd. and Nippon Nyukazai Co., Ltd.



Reciprocal audit

RC Meeting of Group Companies Located Outside Japan

The fifth International RC Meeting was held at the Himeji Plant on December 6 to 7, 2011. The meeting brought together those involved in manufacturing as well as staff in charge of implementing Responsible Care at three Group companies outside Japan. With the goals of improving the sensitivity of detecting work-related risks, clarifying the danger of chemical burns, and addressing problems with processing equipment for acrylic acid, we provided training through KY risk prediction and hands-on training while also reviewing accident case histories.



Meeting & hands-on training

Group Companies in Japan

Nisshoku Butsuryu Co., Ltd.

The Nisshoku Butsuryu Group, having acquired certification of ISO 9001 and ISO 14001 registration together with the head office, introduced an OHSAS 18001-compliant Occupational Health and Safety Management System in fiscal 2012. It continues to sharpen its focus on environmental protection, distribution safety, and distribution quality while aiming to become a better logistics company that warrants the full confidence of shippers and customers alike for implementing a management system according to international standards. The following are examples of its initiatives.

- Reducing the threat of global warming and mitigating environmental impacts through initiatives focused on modal shift, transport efficiency and improved fuel economy; energy-efficient driving methods; and green management with an emphasis on eco-friendly logistics
- Continuing to introduce risk assessments of hazardous and toxic work in yard operations and introducing an OHSAS 18001-compliant Occupational Health and Safety Management System in order to implement the PDCA cycle in fiscal 2012
- Strengthening its commitment to a transportation safety management system that targets truck transport companies while working to prevent traffic accidents; introducing a combination of digital tachometers, GPS units, drive recorders ("Mimamorikun" advanced driving information system) according to risk evaluations to support energy-efficient driving methods, safe driving, and accident response
- Reviewing basic policies and promoting the integration of environmental and quality management systems in order to achieve both efficiency and continuous improvement

"Mimamorikun" advanced driving information system  
 An advanced driving information system incorporating a combination of digital tachometers, GPS units, and drive recorders.



Daily driving report Eco safe driving report

Nippon Polyester Co., Ltd.

In seeking to reduce environmental emissions, Nippon Polyester has set targets every year since fiscal 2006 and has made ongoing progress toward meeting these targets. In order to proceed with further reductions in the future, all workplaces must take steps to adopt detailed activity targets. The company remains committed to promoting reductions in environmental impacts through the framework of Eco-Action 21.

Looking to process safety and disaster prevention, the company is working to continue its record of zero facility disasters and accidents by systematically practicing preventive maintenance and disaster prevention drills. In the area of occupational health and safety, the company is maintaining its commitment to zero industrial accidents through its KY risk prediction campaigns and the like.

In relation to occupational health and safety, the company received a commendation as an Outstanding Safety and Health Plant from the Itami Labor Standards Association.

Furthermore, it received a letter of appreciation from the Sanda Fire Protection Association for its participation in local reconstruction after the Great East Japan Earthquake.



Chugoku Kako Co., Ltd.

This company maintained a record of zero accidents with loss of workdays for more than 10 years. Unfortunately, one injury without loss of workdays occurred at the end of the fiscal year. It has continued its close-call incident (*hiyari hatto*) campaigns for more than five consecutive years. In fiscal 2011, it achieved 80 of the targeted issues that it identified as a means of breaking from routine. The items identified and relevant countermeasures are confirmed at workplace meetings the following month, and efforts are made to share information. The company is committed to maintaining the safety of its operations by promoting RC activities in the future.



Record of no accidents (with loss of workdays)



Group Companies in Japan

Tokyo Fine Chemical Co., Ltd.

In fiscal 2011, Tokyo Fine Chemical completed renewal of its ISO 9001 registration and maintenance audit of Eco-Action 21 with a resolution to further refine its operations. In the area of occupational health and safety, with "safety takes priority over production" as its credo, the company will continue to install safety signage where indicated following risk assessments; KY risk prediction and close-call incident (*hiyari hatto*) campaigns; and caution signage in locations where quality issues can arise. The company will continue to implement its zero industrial accidents program.



Nippon Polymer Industries Co., Ltd.

In the aftermath of the Great East Japan Earthquake in 2011, government assumptions are being revised regarding the severity of earthquakes, tsunami height, and liquefaction phenomena along the Tokai-Tonankai-Nankai faults that are forecast to erupt in a major earthquake at some point in the near future. As a result, there is a need to reconsider hazardous materials facilities; review emergency regulations and preventive regulations; and provide evacuation routes, methods, and training drills for tsunamis.

The production building is used as an emergency high-area evacuation site for an assumed 3.9-meter tsunami. During the comprehensive emergency drill, the company conducted an evacuation to the second floor of the third production building, which is about eight meters above ground.

Tsunami high-area evacuation drill during emergency drill



Nihon Jyoryu Kogyo Co., Ltd.

During the Great East Japan Earthquake of March 11, 2011, liquefaction damaged Nihon Jyoryu Kogyo's in-plant roads and drainage facilities. The company was able to resume production after one month.

After these initial difficulties, the company's environmental protection initiatives were focused on waste generation, emissions of substances subject to the PRTR, and energy efficiency with the goal of maintaining the energy and emission intensity levels of the previous year. As a result, the company was able to achieve its goals for emissions of PRTR substances and energy consumption.

In the area of occupational health and safety, the company increased safety awareness through risk assessments; through KY risk prediction, close-call incident (*hiyari hatto*), and "5 S" campaigns; and through reviews of industrial accidents as part of a training program. The company also achieved its goal of zero accidents with and without loss of workdays.

As for its "5 S" campaigns, Nihon Jyoryu Kogyo remains committed to ongoing improvements. Proposals for improvements submitted by individuals are increasing, as are improvements to group circles.



Reporting at Environmental Meeting



Workplace commendation at Safety Meeting

NIPPON NYUKAZAI CO., LTD.

Nippon Nyukazai's RC activities in fiscal 2011 sought to eliminate the occurrence of industrial accidents by focusing occupational safety back on our original commitment to "safety taking priority over production." The company undertook a review of previous disasters; strengthened and promoted recurrence prevention systems; and implemented improvements to and reductions in hazardous tasks assessed as level III by OSHMS.

In terms of environmental protection, the company set out to reuse recovered water and reviewed cleaning methods in order to reduce the volume of alkali waste, which accounts for about 80% of all its waste.

In terms of process safety and disaster prevention, the company learned lessons from the Great East Japan Earthquake and conducted comprehensive emergency drills four times a year in each plant while reviewing disaster preparedness systems in preparation for large-scale earthquakes. In addition, the Manufacturing Innovation Initiative under TPM activity was introduced in April; moreover, as part of voluntary preservation, the company conducted thorough "5 S" campaigns after specific areas were identified. In future, the company will strive for greater operational safety and further promote and enhance its RC activities.



RC workplace audit

Safety chant



Fire-fighting drill (Kashima Plant)

Voluntary protection activity (pump unit, Kawasaki Plant)

Nippoh Chemicals Co., Ltd.

Nippoh Chemicals continued its RC Activities Plan in fiscal 2011. That same year, the company conducted its first spill-response training drill for a mock oil spill into a river. This initiative was pursued in the interests of environmental protection, process safety, and disaster prevention. Looking to occupational health and safety, the company offered safety operation workshops for all employees working in the plant during the periodic maintenance shutdown, and raised awareness of safety anew. Moreover, continuing an initiative started in the previous fiscal year, the company is improving and strengthening its compliance system by providing training in laws and regulations (including the revised Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., and Security Export Controls).

Although the company experienced one facility disaster in fiscal 2011, it remains committed to ensuring stable operation by working to prevent any recurrence.



Oil spill response training



Safety operation workshop

Group Companies outside Japan

NIPPON SHOKUBAI EUROPE N.V. (Belgium)

In recent years, NSE has undertaken several efforts to increase RC activities on site. As a result, several new systems and procedures have been introduced.

For example, we introduced Last Minute Risk Analysis (LMRA). This risk assessment is implemented just before a job is started, and it is performed by the person/team executing the job.

As part of this initiative, we introduced a small card with necessary and applicable questions.

Together with the LMRA, we introduced the "brotherhood principle." This entails discussion of dangerous situations as soon as they are noticed through personal discussion among those involved. Anyone can submit a comment that may be shared with everyone.

Training in all these systems is provided on the VESTA unit. This is a scale replica of the actual installation.

In 2011, we also introduced "gamba signalization" of important accidents/incidents in order to prevent their recurrence. Flyers describing these events are distributed throughout the company. These flyers describe the accidents, the results of the investigation into their causes, and preventive measures.

As a result of stable operation and the introduction of several improvements such as better steam traps, we have also managed to reduce our energy consumption significantly. Moreover, through several process optimizations, NSE has greatly decreased the amount of waste generated.



Interview



**We reduced the energy intensity by 13% relative to the 2007 level.**

**Roel De Vil**  
Senior Technical Manager  
NIPPON SHOKUBAI EUROPE N.V.

Responsible Care is also one of our major concerns at NSE. In this short interview, I'd like to highlight some of our important RC activities from a technical point of view.

Regarding energy consumption, we managed to achieve a reduction of 13% in the past five years. In 2007, our energy consumption was still 9.93 GJ/ton SAP. Due to the efforts undertaken by the entire organization, we managed to decrease this to 8.65 GJ/ton SAP in 2011. Our main initiative was the close follow-up and replacement of several steam condenser traps. A significant increase in efficiency also contributed greatly to the global decrease in energy consumption.

In recent years, we also improved the safety of our installations. Our improvements included installation of an automatic fire extinguishing system, safety improvements, and several ergonomic improvements. Recently, we also focused on process safety and on safety-critical interlocks. After prioritizing the interlocks, we set up a test program in order to execute a life test of the safety critical interlocks every year. We managed this thanks to the cooperation of several departments within our company.

Besides these technical measures, we undertook several organizational measures, and this remains an important action point for the future. We remain committed to this endeavor.

NA Industries, Inc. (U.S.A.)

In February 2011, we installed digital positioners on the feedwater control valves and replaced the pneumatic level controls with electronic controls on our boilers. These modifications improved the overall efficiency of our boilers and reduced our natural gas consumption by 7%. In addition, the maintenance department began using a thermal imaging camera to identify electrical hot spots in and around various electrical connections and electrical panels. Our thermal imaging program has helped reduce the potential for catastrophic equipment failure and industrial electrical fires.

In March 2011, we registered with e-plan, a voluntary electronic reporting tool for complying with the Emergency Planning Community Right-To-Know Act (EPCRA). This registration gives all emergency responders immediate access to our Emergency Action Plan (EAP), site map, and all chemical storage areas.

In May 2011, we modified our Emergency Action Plan and added a new alarm sound for tornados and sheltering-in-place. Employees have now been trained on what to do in the event of a tornado or a chemical release from a neighboring plant.



Singapore Acrylic Pte Ltd.

Having adopted a management policy of safety first, zero accidents, and zero disasters, Singapore Acrylic is implementing Responsible Care as part of its daily operations. As part of a disaster preparedness activity in 2011, the company conducted an emergency-response drill for a mock unloading of a tank truck with the participation of the Sakura Emergency Support Unit. Also, safety assurance for employees and contractors was improved following a review of the work permit system in the industrial park. For 2012, Singapore Acrylic is upholding its commitment to promoting occupational health and safety initiatives through risk assessment, HAZOP, and environmental protection activities, including energy efficiency and waste reduction.





Group Companies outside Japan

PT. NIPPON SHOKUBAI INDONESIA

PT. Nippon Shokubai Indonesia (NSI) believes that the rationale behind Responsible Care is to build, maintain, and improve trust relationships with stakeholders; it is continuing in this spirit with daily diligence. Currently, the company is committed to ensuring that safety, environmental protection, and stable operation remain paramount during construction of large-scale AA/SAP plants.

1. Commendations from Indonesian government agencies

- Zero Accidents Award (received 10 consecutive times) presented by Muhaimin Iskandar, Minister of Manpower and Transmigration
- Responsible Care Platinum Award (received two consecutive times, only recipient) presented by Benny Wahyudi, Director General, Ministry of Industry
- "Green Award" of the PROPER Award (environmental performance screening system for company, received seven consecutive times) presented by Balthasar Kambuaya, Minister of Environment



2. 12th Asia Pacific Responsible Care Conference (APRCC)

Exhibition: NSI introduced its RC initiatives.



3. Other Main RC Activities

- Responsible Care Open Day: Invited neighboring high school students to tour facilities and introduced NSI's RC activities; continued activities to deepen understanding.
- Joint firefighting drill: Since no public fire-fighting entity exists, drills are held on a regular basis to develop a cooperative emergency response team comprising neighboring companies.
- Collaboration with raw material suppliers and shipping companies: In order to improve safety when transporting raw materials and products in consideration of local problems with transportation infrastructure, initiatives are undertaken with raw material suppliers and shipping companies.



SINO-JAPAN CHEMICAL CO., LTD. (Taiwan)

In fiscal 2011, SINO-JAPAN CHEMICAL identified the priority issues of dealing with emergencies and undertaking joint disaster preparedness in the region. In order to strengthen its accident response when transporting hazardous materials, the company formed the Joint Organization for Emergency Preparedness in conjunction with more than 30 companies, including upstream and downstream manufacturers in the supply chain and transportation companies. In the remote chance of an accident, these companies are prepared to provide instant support to one another. The Joint Organization for Emergency Preparedness practices emergency drills and strives to improve its response capabilities.

Internally, the company conducts annual emergency response drills to improve its employees' emergency response skills. In 2011, it was also certified as a competent fire-fighting organization. The company actively participates not only in in-house drills, but also engages in large-scale joint exercises sponsored by government agencies. In 2011, the Industrial Development Bureau of the Ministry of Economic Affairs presented the company with a letter of appreciation for its participation in joint emergency exercises in Linyuan Industrial Park.

Each year, the company raises awareness of environmental protection and the health and safety of its employees through its compliance with the ISO 14001 standards for environmental management systems and with the OHSAS 18001 standards for occupational health and safety management systems. SINO-JAPAN CHEMICAL will continue to improve with the goal of "safety first, superior environmental protection, and quality as No. 1."



NISSHOKU CHEMICAL INDUSTRY (ZHANGJIAGANG) CO., LTD. (China)

Nisshoku Chemical Industry continued its environmental, safety, and quality assurance production initiatives in 2011. It also focused on its goals of minimizing its generation of industrial waste and increasing energy efficiency. In the area of waste management, the company is projecting a roughly 10% reduction in waste. In 2010, the government of China introduced Standardization of Production Safety to support proper equipment maintenance and the health of both people and the environment. The company completed its preparations in 2011 and began to undergo an audit in 2012.

The company also undertakes fire-fighting activities in June and November each year and conducts fire drills jointly with members of the local fire-fighting team. The volunteer disaster prevention team trains in-house every two months to ensure it can promptly handle any disasters that might occur. In terms of occupational health and safety, the company holds a monthly health and safety meeting and measures noise, chemical concentrations, and particulate concentrations. In this way it maintains a work environment that supports the health of its employees.



The Japan Chemical Industry Association (JCIA) issued the "Independent Verification – Opinions" for our Environmental and Social Report 2012 (Japanese edition) in Japanese as below. It expresses verification on rationality and accuracy, and informed opinions of chemical industry specialists on the contents related to our RC activities and the characteristics of our report.

「2012 環境・社会報告書 CSR経営の実践」  
第三者検証 意見書

2012年6月11日

株式会社 日本触媒  
代表取締役社長 池田 全徳 殿

一般社団法人 日本化学工業協会  
レスポンスフル・ケア検証センター長  
高瀬 純治

■ 検証の目的  
レスポンスフル・ケア報告書検証は、株式会社日本触媒が作成した「2012 環境・社会報告書 CSR経営の実践」(以後、報告書と略す)に記載されている、下記の事項について、レスポンスフル・ケア検証センターが化学業界の専門家の意見を表明することを目的としています。

- 1) パフォーマンス指標(数値)の算出・集計方法の合理性及び数値の正確性
- 2) 数値以外の記載情報の正確性
- 3) レスポンスフル・ケア活動の評価
- 4) 報告書の特徴

■ 検証の手順

- ・本社内において、各サイト(事業所、工場)から報告される数値の集計方法の合理性、及び数値以外の記載情報の正確性について調査を行いました。調査は、報告書の内容について各業務責任者及び報告書作成責任者に質問すること、並びに彼らより資料提示・説明を受けることにより行いました。
- ・姫路製造所において、本社に報告する数値の算出方法の合理性、数値の正確性、及び数値以外の記載情報の正確性の調査を行いました。この調査は、各業務責任者及び報告書作成責任者に質問すること、資料提示・説明を受けること、現場確認並びに証拠物件と照合することにより行いました。
- ・数値及び記載情報の調査についてはサンプリング手法を適用しました。

■ 意見

- 1) パフォーマンス指標(数値)の算出・集計方法の合理性及び数値の正確性について
  - ・数値の算出・集計方法は、本社及び姫路製造所において、合理的な方法を採用しています。
  - ・調査した範囲に於いて、パフォーマンスの数値は全社統一基準に基づき正確に算出・集計されています。
- 2) 記載情報の正確性について
  - ・報告書に記載された情報は、正確であることを確認しました。原案段階では表現の適切性あるいは文章の分かり易さに関し、若干指摘事項がありましたが、現報告書では修正されています。
- 3) レスポンスフル・ケア(以後、RCと略す)活動の評価について
  - ・第7次中期RC推進基本計画の達成に向けた活動を展開し、パフォーマンスが向上していることを確認しました。日本政策投資銀行の「DBJ環境格付」及び「DBJ防災格付」で最高ランクに評価されたのも、先進的かつ高度なRC活動の取組が認められた証左と認められます。
  - ・生産設備の増設が進められており、今後生産量の増加が見込まれますが、次年度以降の第8次中期RC推進基本計画において各種環境への負荷低減に向けて目標設定されることを期待します。
  - ・ライフサイクルを通じて環境負荷が小さくなる製品の開発に努め、その成果を定量化し、報告書に掲載していることを評価します。今後も社会の環境負荷軽減に貢献する製品の紹介を継続されることを期待します。
  - ・姫路製造所では、種々の取り組みによりRC活動のレベルアップや従業員教育の充実(力)を入れていることを確認しました。また、想定地震と津波に対する対策を検討し、液状化等の発生を防止する護岸補強工事を着々と遂行していることを評価します。
- 4) 報告書の特徴について
  - ・国内及び海外のグループ会社のRC活動内容を多数紹介していることを評価します。

以上



Outline

Established	August 21, 1941
Common stock	¥25,000 million
Net sales	¥320,700 million (consolidated)      ¥230,100 million (non-consolidated)
Number of employees	3,779 (consolidated)      1,944 (non-consolidated)
Osaka Office	Kogin Bldg., 4-1-1 Koraibashi, Chuo-ku, Osaka 541-0043, Japan TEL: +81-6-6223-9111 FAX: +81-6-6201-3716
Tokyo Office	Hibiya Dai Bldg., 1-2-2 Uchisaiwai-cho, Chiyoda-ku, Tokyo 100-0011, Japan TEL: +81-3-3506-7475 FAX: +81-3-3506-7598
Main Plants and Research Centers	Himeji Plant, Kawasaki Plant, Suita Plant, 6 Research Centers, Process Technology Center As of March 31, 2012

Major Product Lines

Basic Chemicals

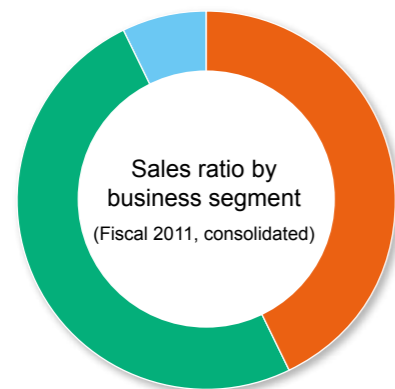
Acrylic acid, acrylates, ethylene oxide, ethylene glycol, ethanolamine, higher-alcohol surfactants, glycol ether

Functional Chemicals

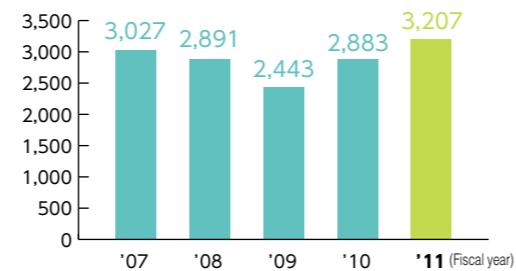
Superabsorbent polymers, intermediates for pharmaceutical, polymers for concrete admixture, electronic information materials, iodine, maleic anhydride, resins for adhesives, resins for paints, plastic moldings, adhesive products

Environmental Products & Catalysts

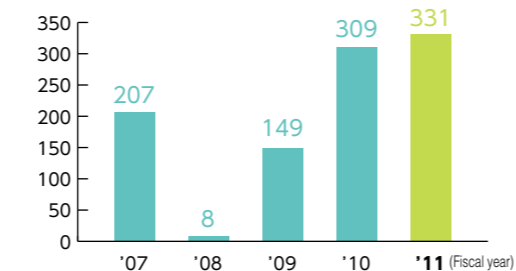
Automotive catalysts, De-NOx catalyst, dioxins decomposition catalyst, process catalyst, waste gas treatment catalyst, materials for fuel cells



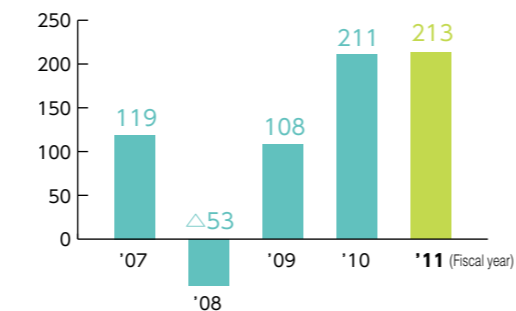
Net sales (consolidated)  
(100 millions of yen)



Ordinary income (consolidated)  
(100 millions of yen)



Net income (consolidated)  
(100 millions of yen)



Group Companies

<In Japan>

Nippon Chemicals Co., Ltd.\*, Nippon Polyester Co., Ltd.\*, NIPPON NYUKAZAI CO., LTD.\*, Nisshoku Butsuryu Co., Ltd.\*, Tokyo Fine Chemical Co., Ltd.\*, Chugoku Kako Co., Ltd.\*, Shinritsu Co., Ltd. (Renamed NIPPON SHOKUBAI TRADING CO., LTD. on April 1, 2012)\*, Nihon Jyoryu Kogyo Co., Ltd.\*, ICT Co., Ltd.\*, Nippon Polymer Industries Co., Ltd., Japan Composite Co., Ltd.

<Outside Japan>

NA Industries, Inc.\*, NIPPON SHOKUBAI (ASIA) PTE LTD\*, PT. NIPPON SHOKUBAI INDONESIA\*, NIPPON SHOKUBAI EUROPE N.V.\*, Singapore Acrylic Pte Ltd.\*, Singapore Glacial Acrylic Pte Ltd.\*, NISSHOKU CHEMICAL INDUSTRY (ZHANGJIAGANG) CO., LTD.\*, American Acryl L.P., LG MMA Corporation, SINO-JAPAN CHEMICAL CO., LTD. (\* Consolidated subsidiaries)

Nippon Shokubai — A Part of Your Daily Life



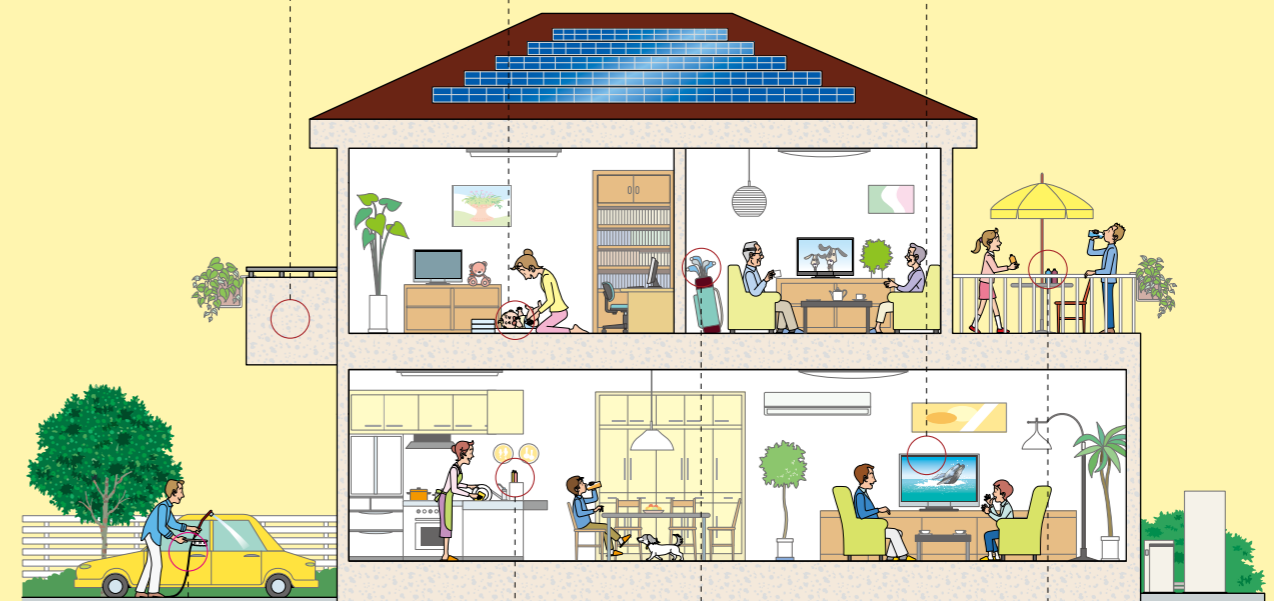
Acrylates are used as ingredients in eco-friendly water-soluble paints.



Superabsorbent polymers are used in sanitary goods such as disposable diapers.



Acrylic resins for optical materials and polymers for color resists are used in energy-efficient LCD TVs.



Catalysts are used for vehicle emissions control and for decomposing dioxins generated by incinerators.



Higher-alcohol surfactants and water-soluble polymers are used as ingredients in various detergents.



Acrylic acid derivatives are used as core materials in golf balls.



Ethylene glycol is used as a raw material in the manufacture of recyclable PET bottles.