

# 2013

## Environmental and Social Report

Our Commitment to CSR



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**Editorial Policies**

- This is our fourth report in English (we have published 12 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 undertaken by the Japan Chemical Industry Association.

**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 & Performance 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 Butsubu Co., Ltd.

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

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**Restoring public trust in Nippon Shokubai as a chemical company**

On September 29 of last year, an explosion and fire in an acrylic acid production facility at our Himeji Plant resulted in one fatality and 36 injuries, some serious. I extend my heartfelt condolences to the bereaved family and pray for the soul of the deceased. To the injured and the residents of the affected neighborhood, I am deeply sorry that we caused you such great pain, worry, and hardship. I also apologize for the disruptions caused to our customers and to the authorities concerned.

Following the accident, we formed an Accident Investigation Committee led by outside academic experts. They commissioned an investigation into the cause or causes of the accident and recommended measures to prevent a recurrence. In an interim report issued on January 18, the direct causes of the accident were publicly announced. In addition, in their final report issued on March 27, the committee released its findings on the causes of the accident and its recommended preventive measures. As a result, we have rededicated ourselves to making a genuine fresh start toward restoring public trust in Nippon Shokubai as a chemical company.

Since 1973, we have maintained an organization to implement safety initiatives under our corporate credo, "Safety takes priority over production." However, last year we experienced a serious accident. Although we had never before experienced such a tragedy, we shall remain committed to restoring our company to a position of safety leadership.

We established our Safety Reinforcement Team in April to implement our preventive measures company-wide, without assuming the accident could be attributed to a problem inherent to a specific facility. We will implement

preventive measures, manage their progress, and verify their state of implementation.

Going forward, we shall revisit the fundamental aspects of our corporate credo, "Safety takes priority over production," making a fresh start with the goal of truly restoring Nippon Shokubai's commitment to remaining a chemical company trusted by society. Our objective is safe, secure, and stable production.

In fiscal 2013, we were scheduled to launch the medium-term business plan that underpinned the latter half of TechnoAmenity 2015, our long-term business plan. As a result of last year's accident, however, we decided to convert this plan into a single-year plan for fiscal 2013. We also emphasized accident recovery as our top priority. Moreover, we determined that our Responsible Care plan would also be implemented for a single fiscal year. We have reviewed our disaster prevention system with a focus on preventive measures and will direct all our energies into rebuilding our system. In addition, we intend to steadily implement various aspects of our corporate social responsibility (CSR) through conventional initiatives.

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

June 2013

  
 Masanori Ikeda, President

On September 29, 2012, our Himeji Plant experienced an explosion and fire involving one fatality. We offer our deepest condolences for the loss of life and we sincerely apologize to the bereaved family, to the injured, to neighboring residents, and to others who suffered the consequences of this tragic event.

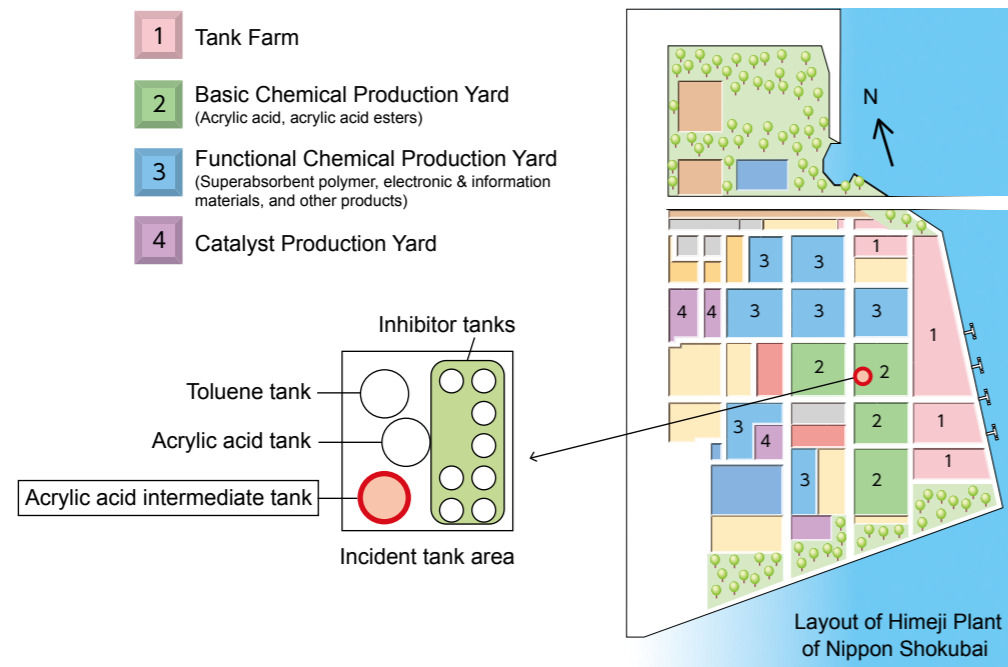
In the aftermath of this accident, we formed an Accident Investigation Committee led by academic experts from outside our company who conducted an investigation into the cause or causes of the accident and recommended measures to prevent a recurrence. On March 27, 2013, we received the accident investigation report.

The following is an abstract of this report.

## 1. Summary of the Accident

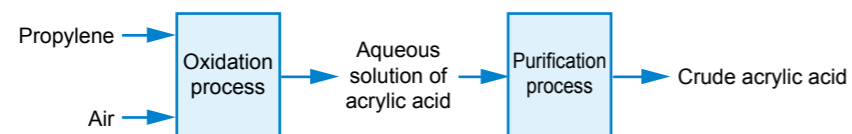
At about 14:35 on Saturday, September 29, 2012, an explosion and fire struck the acrylic acid intermediate tank in the acrylic acid production facility of the Himeji Plant of Nippon Shokubai Co., Ltd. in Himeji-shi, Hyogo prefecture. This accident resulted in one fatality and 36 injuries.

## 2. Outline of the Plant Involved in the Accident

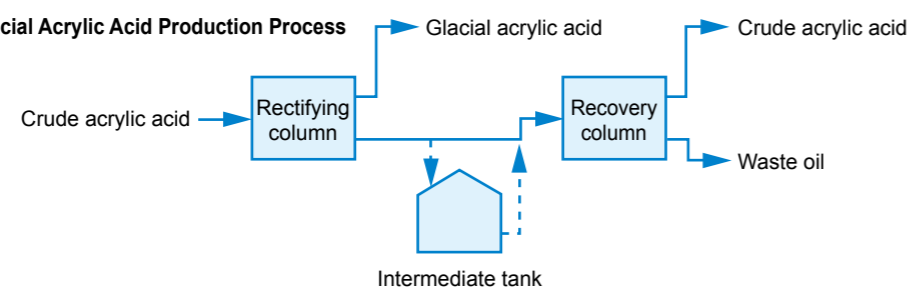


## 3. Schematic of the Acrylic Acid Production Process

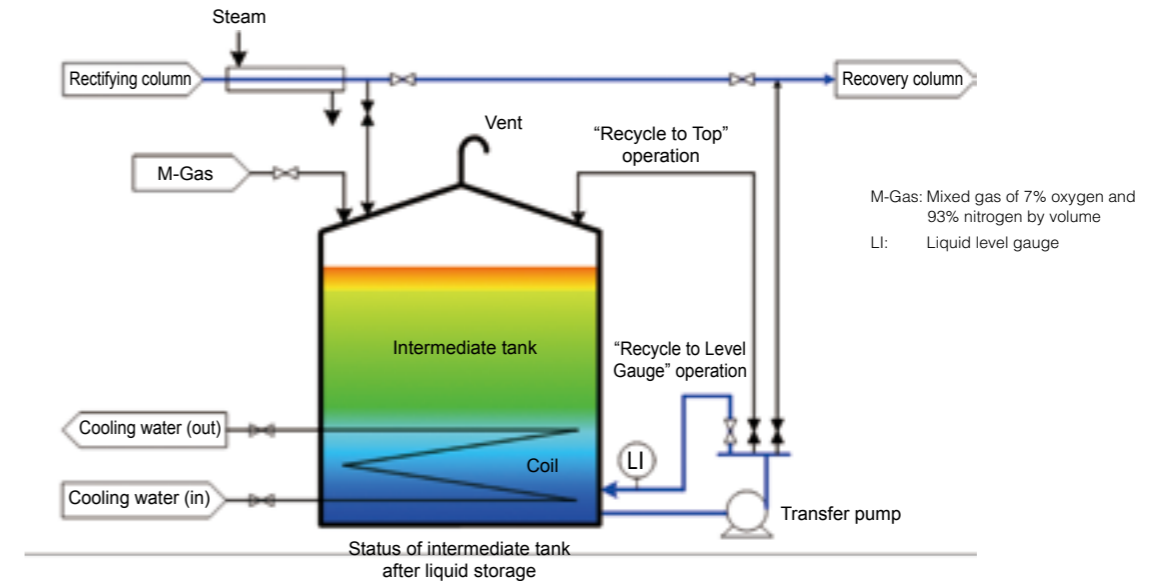
### Crude Acrylic Acid Production Process



### Glacial Acrylic Acid Production Process



## 4. Schematic of Equipment Involved in the Accident



## 5. Causes of the Accident

The investigation and analysis identified the direct causes of the accident as follows.

- (1) Although the high-temperature bottom liquid from the rectifying column was building up in the intermediate tank, the "Recycle to Top" operation was not commissioned; therefore, the acrylic acid remained stagnant for a long period of time at high temperature in the upper part of the tank.
- (2) Acrylic acid dimer formation accelerated in the high-temperature zone of the tank liquid, and the heat of the dimerization reaction further increased the temperature of the liquid. As a result, the acrylic acid began to polymerize, further increasing the temperature of the liquid.
- (3) Due to a lack of thermometers and inadequate temperature monitoring, the abnormal condition that led to the polymerization reaction was impossible to detect. As a result, the intermediate tank exploded, leading to a fire, severe casualties, and property damage.

## 6. Measures to Prevent Recurrence of the Accident

- (1) Implementing measures to prevent a recurrence for the equipment involved
- (2) Ensuring company-wide deployment of measures to prevent similar disasters
- (3) Fostering a culture of safety for a Safe Manufacturing Plant and Corporation

Note: Please visit our website to view a detailed accident report.

We are committed to implementing the following preventive measures by actively adopting the recommendations outlined in this report.

- (1) Company-wide deployment of preventive measures
  - Assured implementation of risk assessments
  - Collection, sharing, and effective application of information on safety technology
  - Enhanced education and training programs
- (2) Strengthening a culture of safety prioritization
- (3) Verifying the implementation of safety measures

<Corporate Philosophy>

# TechnoAmenity

Providing affluence 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.

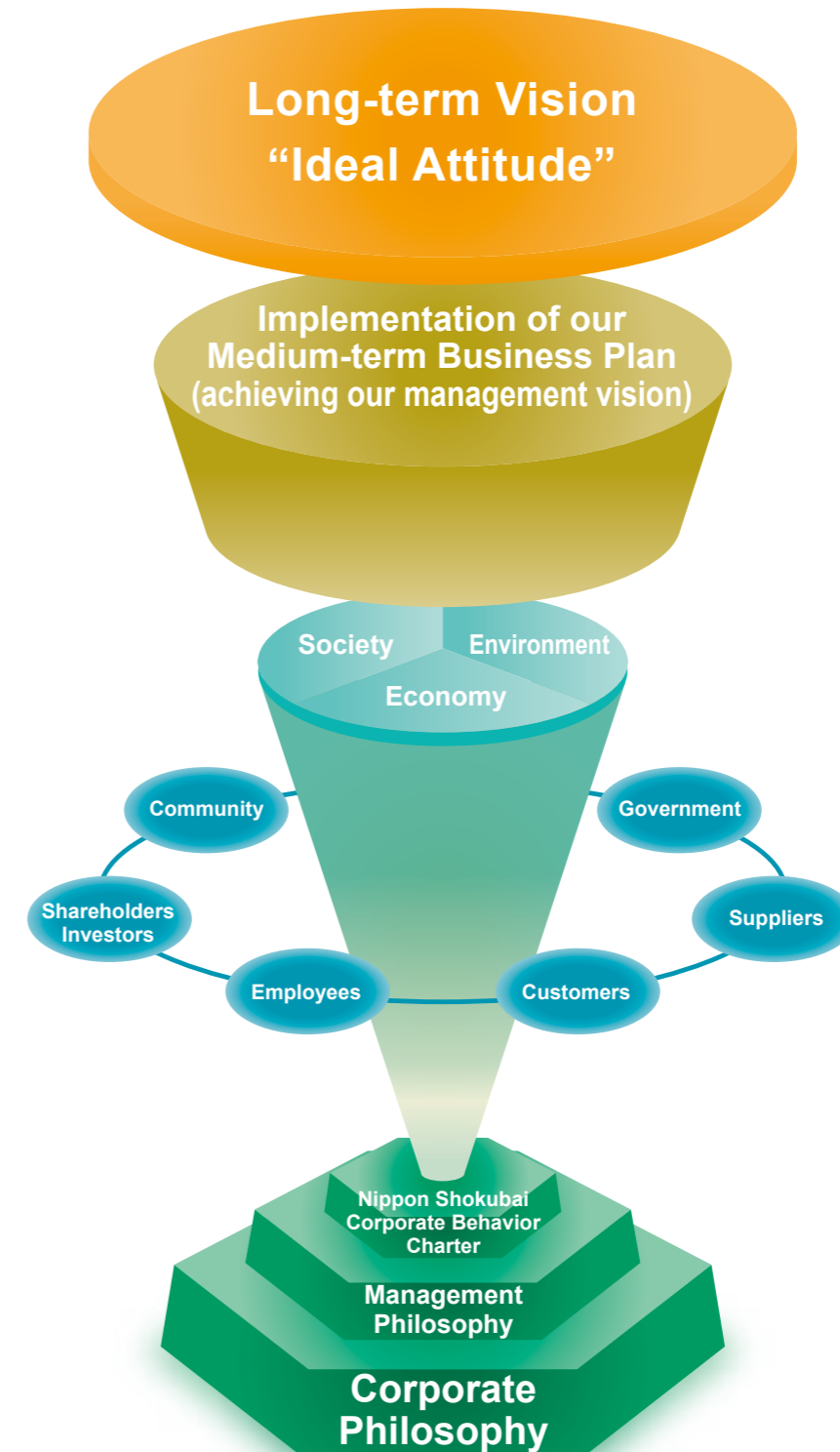
### CSR Implementation Structure

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.

We have adopted a management vision based on this approach to CSR in order to achieve our long-term vision (ideal attitude). Moreover, we will continue to contribute to the emergence of a sustainable society by formulating and implementing our medium-term business plan as a concrete plan of implementation.



Social Contribution

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 2012



Photo taken in August 2012



Training new employees hired in April 2012

Note: The forest development initiatives of Nippon Shokubai were undertaken in cooperation with the National Land Afforestation Promotion Organization and NPOs.

Conserving and Popularizing the "Nojigiku" Chrysanthemum

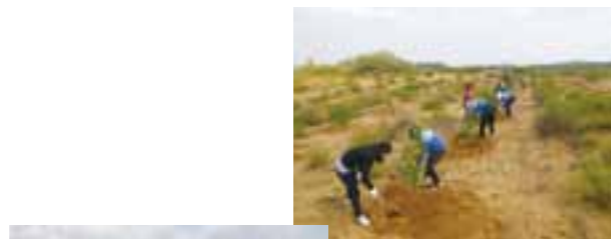
In order to rescue, conserve, and popularize the endangered "Nojigiku" chrysanthemum, the Hyogo prefectural flower, we began cultivating it in 1972. We have been distributing seedlings every year since 1974 in cooperation with Hyogo Prefecture. In April 2012, we distributed 30,000 seedlings to 74 organizations, 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.

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: Ejn Horo Banner, Inner Mongolia Autonomous Region, China  
 Activity: Afforestation, maintenance, management, and the like  
 Start date: October 2008



Photos taken in September 2012



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 2012, about 623 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.



Summer gathering

Initiatives to Help Raise Future Generations

Hosting Internship Trainees

Each year from July to September, our various plants host trainees from technical colleges. In fiscal 2012, a total of 29 students from 21 colleges gained experience through this program.



Research Center in the Suita district



Kawasaki Plant

Science Booth

We staffed a science booth at the Sakurayama Park Festival in July 2012 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.



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

Following the introduction of our Executive Officer System in 2010, every year we provide training for executive officers with the corporate goal of strengthening internal controls and improving corporate governance.

In December 2012, we provided an executive officer training session under the theme "Summary of the review of the Companies Act system and suggestions regarding corporate governance" for executives and operating officers (as well as corporate auditors in an observer role). We invited Associate Professor Kenichi Matsuo of the Graduate School of Law and Politics, Osaka University, to deliver this lecture. In conjunction with the ongoing revision of the Companies Act, this session provided a forum for developing a background for discussions and learning about basic concepts and directions as well as corporate governance considerations and implications.



Training in Specific Laws and Regulations

Training Our Group Companies in Specific Laws and Regulations

Since January 2012, we have been providing our Group companies with training in Specific Laws and Regulations in order to further enhance Group-wide corporate ethics.

In the past, we carried out sequential training in specific laws and regulations. These sessions have included "Basic Introduction to Contracts for Sales and Purchasing Departments," "Basic Understanding of Contracts and the Antimonopoly Act (R&D)," and the "Subcontract Act." This training is provided to employees of Chugoku Kako Co., Ltd., Nippon Chemicals Co., Ltd., Nippon Nyukazai Co., Ltd., Tokyo Fine Chemical Co., Ltd., Nihon Jyoryu Kogyo Co., Ltd., Nippon Shokubai Trading Co., Ltd., and Nisshoku Butsuruy Co., Ltd., according to the needs of each company.

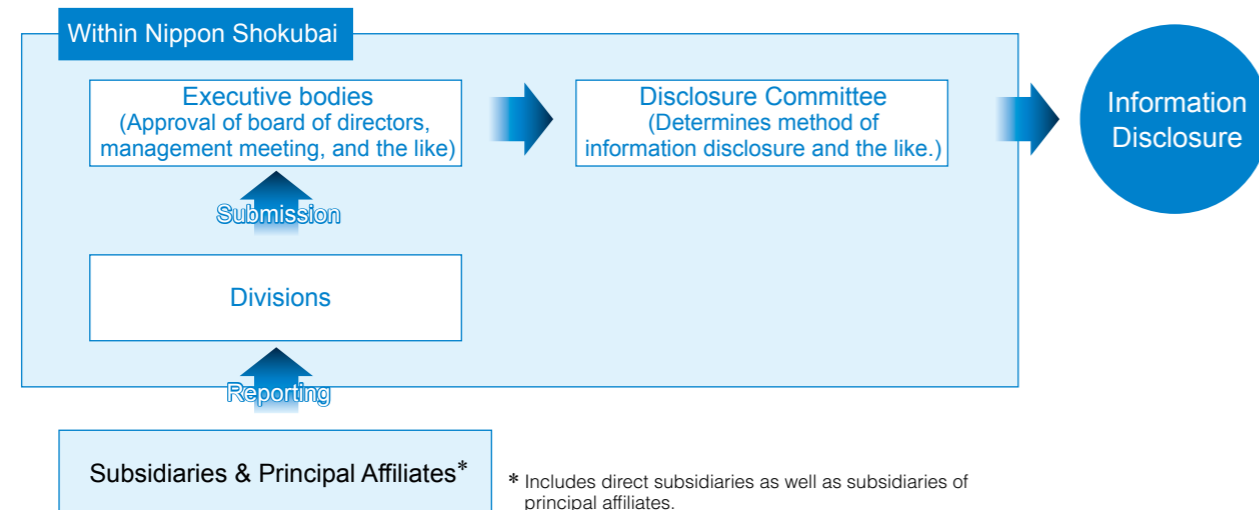
In August 2012, Nippon Polyester Co., Ltd., provided separate legal training regarding the content of the Subcontract Act. Nine participants attended, primarily employees of divisions of Nippon Polyester engaged in subcontracting as part of their routine duties. This training outlined the responsibilities and prohibitions applicable to the main subcontracting enterprise under the Subcontract Act. Because Nippon Polyester falls under the category of a main subcontracting enterprise (more than ¥300 million in capital) as specified in the Subcontract Act, the participants engaged in a lively question-and-answer session about trading practices that emerged in their day-to-day business operations. In addition, they actively addressed issues related to practical application, resulting in more substantial training.



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



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.

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.



Ski tour held as an employee welfare event

Re-employment System

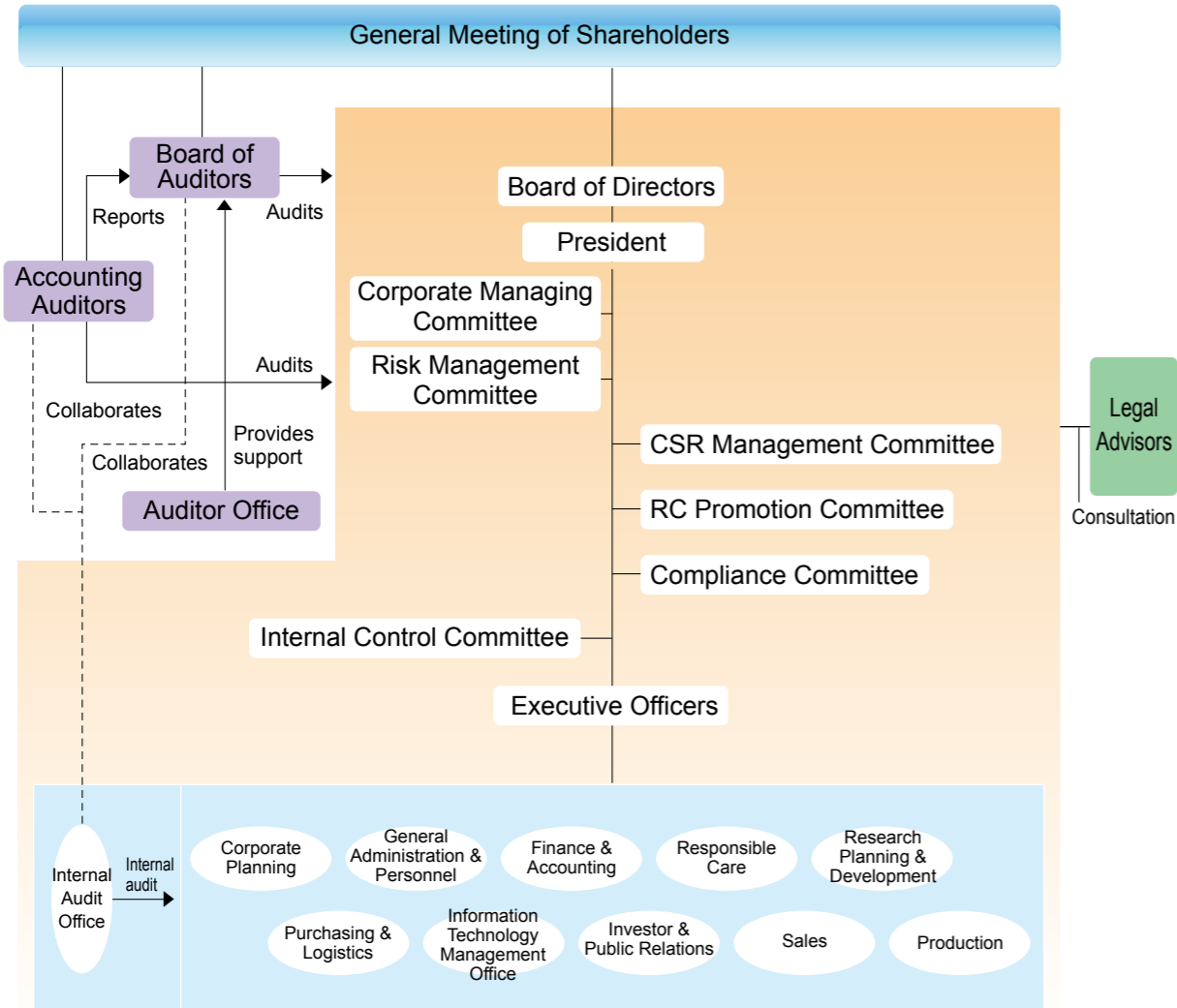
This system corresponds to measures addressing the rescheduling of pension eligibility age and is intended to help stabilize the lives of retired employees through re-employment. The period of employment extends until the age of 65. This initiative contributes to an employee's sense of security, self-worth, 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.

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



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.

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.

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.

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.

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.

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.

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.

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.

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

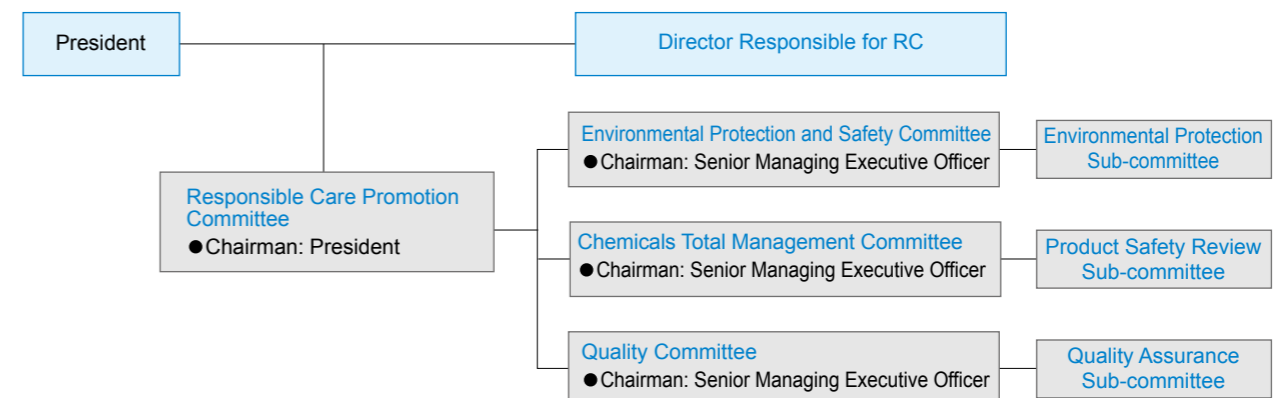
In conformity with our Corporate Philosophy, Management Philosophy and the Nippon Shokubai Corporate Behavior Charter, we rank it as an important management measure to provide products and technologies that contribute to society and environmental protection. In addition, while paying due respect to the 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 2012

Concurrent with our new medium- and long-term business plans, Nippon Shokubai has formulated a three-year Medium-term Responsible Care Promotion Basic Plan targeting safety, quality, environmental protection, and other priorities. In fiscal 2012, our environmental protection initiatives did not succeed in lowering both our energy intensity and CO<sub>2</sub> emissions intensity relative to the previous year. However, we maintained our achievement of zero emissions,<sup>1</sup> and we reduced our

emissions of substances subject to the PRTR Law by 32% compared with the results for fiscal 2005.

In the area of occupational health and safety, we registered eight injuries with loss of workdays<sup>2</sup> and seven injuries without loss of workdays<sup>3</sup> as well as one facility disaster and one facility accident.<sup>4</sup> In the areas of chemical safety and quality, we encountered 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 2012   | 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> emissions 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>Increased energy intensity by 0.4%.</li> <li>Reduced CO<sub>2</sub> emissions intensity by 14.1%.</li> <li>Zero emissions maintained.</li> <li>Emissions of substances subject to the PRTR Law: 105 tons (Reduced by 32%.)</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>One facility disaster occurred.</li> <li>One facility accident 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>Eight injuries with loss of workdays occurred.</li> <li>Seven 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>Four quality nonconformities were 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>Published an Environmental and Social Report.</li> </ul>   |                 |
| Developing RC among Our Group Companies <sup>6</sup>   | <p>Measures Common to Our Group Companies</p> <p>(1) Environmental Protection</p> <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> <p>(2) Process Safety and Disaster Prevention</p> <ul style="list-style-type: none"> <li>To achieve zero facility disasters and zero facility accidents</li> </ul> <p>(3) Occupational Safety and Health</p> <ul style="list-style-type: none"> <li>To achieve zero injuries with loss of workdays</li> </ul> <p>(4) Chemical Safety</p> <ul style="list-style-type: none"> <li>To achieve zero problems related to chemical safety (legal or social problems)</li> </ul> <p>(5) Quality</p> <ul style="list-style-type: none"> <li>To receive zero serious customer complaints</li> </ul> <p>(6) Communication with Society</p> <ul style="list-style-type: none"> <li>To maintain a dialogue with stakeholders and implement reasonable information disclosure</li> </ul> <p>(7) Management System</p> <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>Four of seven group companies in Japan reduced their energy intensity.</li> <li>Waste subject to final disposal at off-site landfills was reduced by 34% compared with the level of the previous fiscal year.</li> <li>Emissions of substances subject to the PRTR Law increased by 15% compared with the level of the previous fiscal year (Group companies in Japan).</li> <li>Zero facility disasters occurred. • Two facility accidents occurred.</li> <li>Seven injuries with loss of workdays occurred.</li> <li>Zero problems related to chemical safety occurred.</li> <li>Zero serious customer complaints were 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 standards <sup>6</sup> Refers to group companies inside and outside Japan, unless otherwise specified.

8th Responsible Care Basic Plan (Fiscal 2013)

Under our corporate credo, "Safety takes priority over production," we have continued to emphasize safe operations. Unfortunately, on September 29, 2012, our Himeji Plant experienced an explosion and fire.

In our 8th Responsible Care Basic Plan, we focused on recurrence prevention as a priority issue. Furthermore, for uniformity with our current business plan, our 8th Plan spans a single year (fiscal 2013).

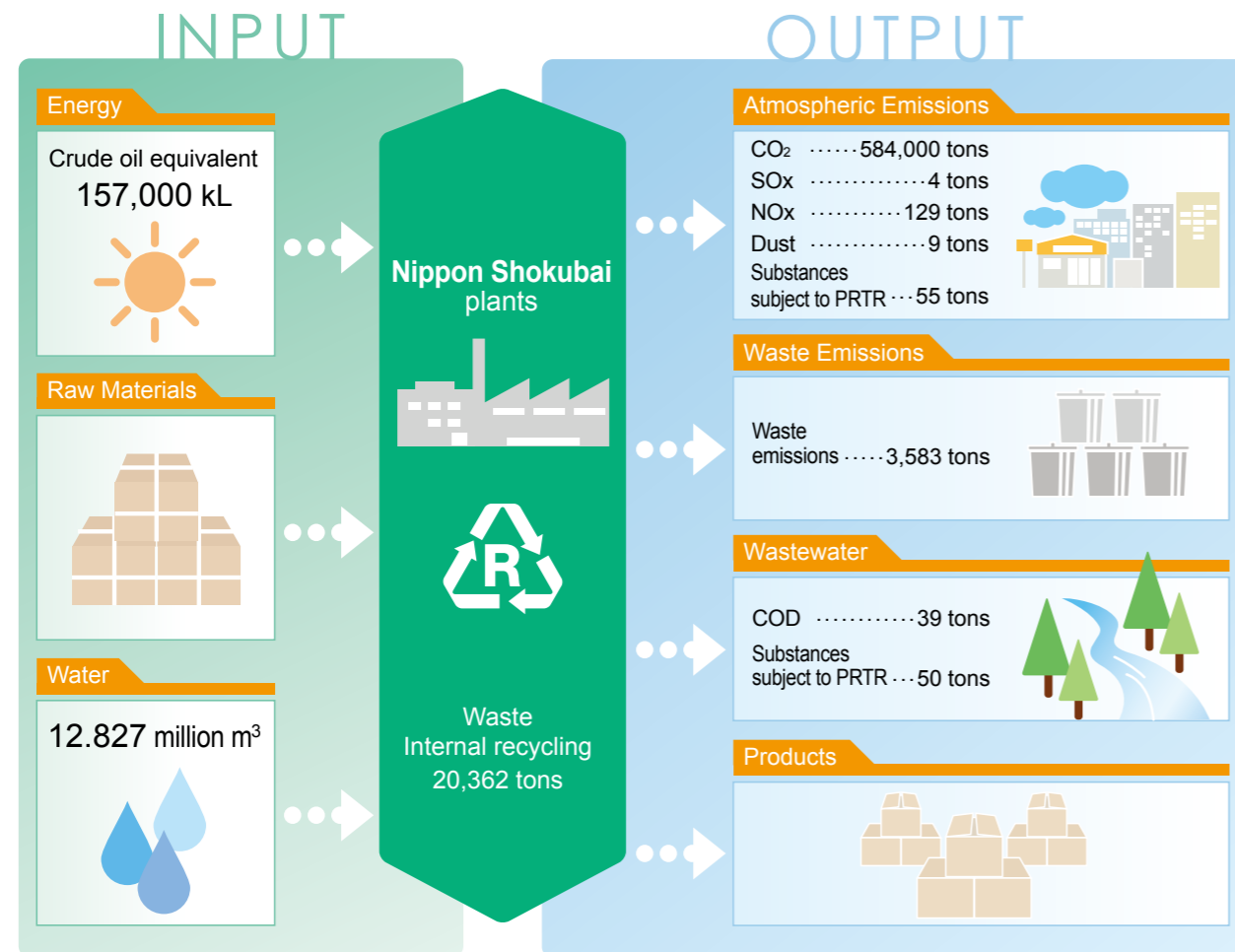
|  | Objectives   | Priority Areas  |
|--|--|---|
| Environmental Protection                               | <ul style="list-style-type: none"> <li>To reduce energy intensity and CO<sub>2</sub> emissions intensity: Steady promotion of energy conservation initiatives</li> <li>To maintain zero emissions</li> <li>Emissions of substances subject to the PRTR Law: To reduce by 10% from fiscal 2010 levels (102.2 tons/year)</li> </ul>  | <ul style="list-style-type: none"> <li>To promote continuous improvement through our environmental management system</li> <li>1) To promote energy conservation initiatives and technical reviews in order to reduce waste and release of PRTR-controlled chemical substances</li> <li>2) To promote development of technology to reduce CO<sub>2</sub> emissions by improving process catalyst and utilization of plant-derived raw materials</li> <li>3) To evaluate by means of c-LCA<sup>1</sup> how the life cycles of all our products contribute to the avoidance of CO<sub>2</sub> emissions</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>In the aftermath of the recent accident, we will strengthen our safety culture and safety foundation with a process safety management system while improving our process safety capacity.</li> <li>1) To conduct thorough risk assessments</li> <li>To re-examine the management conditions as well as the methods of inspecting and monitoring the management status of reactive substances</li> <li>To formulate and implement rules regarding unstable work management and process change management</li> <li>To clarify assumptions and response methods when an abnormality occurs</li> <li>2) To collect information on safety technologies, share it widely, and actively implement it (by updating systems for collecting data on internal and external accidents and hazardous substances)</li> <li>3) To enhance safety drills and training classes (by reviewing content and methods, enhancing the manual, and familiarizing employees)</li> <li>4) To strengthen the "safety first" mindset</li> <li>To establish a climate of thorough compliance with safety regulations</li> <li>5) To promote earthquake response measures and measures for aging facilities</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>To improve the safety culture and promote continuous improvement through the Occupational Safety and Health Management System</li> <li>1) To carry out thorough risk assessments</li> <li>To formulate and implement rules regarding unstable work management</li> <li>To clarify assumptions and response methods when an abnormality occurs</li> <li>2) To collect information on safety technologies, share it widely, and implement it (by updating systems for collecting data on internal and external industrial accidents and hazardous substances)</li> <li>3) To improve knowledge and sensitivity to risk prediction through enhanced training (by reviewing content and methods, enhancing the manual, and familiarizing employees)</li> <li>4) To strengthen the "safety first" mindset</li> <li>To establish a climate of thorough compliance with safety regulations</li> <li>5) To strengthen support for safety initiatives among our contractors</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>1) To re-examine the information on risks of substances and upgrade the collection and utilization system</li> <li>2) To utilize the chemical substance management system effectively (by collecting information on hazardous materials and implementing centralized management through the system, SDS/label substitution, and common use within the company)</li> <li>3) To appropriately comply with the laws and regulations on chemical substances both inside and outside Japan (by collecting information on laws and regulations, keeping our employees informed, and providing information to our Group companies both inside and outside Japan)</li> <li>4) To promote Global Product Stewardship (GPS) (by participating in the Japan Initiative of Product Stewardship (JIPS) launched by the Japan Chemical Industry Association)</li> </ul>  |
| Quality  | <ul style="list-style-type: none"> <li>Zero serious customer complaints</li> <li>Zero quality nonconformities<sup>2</sup></li> </ul>   | <ul style="list-style-type: none"> <li>1) To promote initiatives to prevent quality issues and complaints</li> <li>2) To strengthen our quality assurance system for functional products</li> <li>3) To strengthen the quality assurance initiatives of Group companies in Japan</li> <li>4) To strengthen the quality assurance system of locations outside Japan</li> <li>5) To conduct continuous quality training and raise awareness</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>1) To promote RC community dialogue and plant tours while participating actively in community social activities</li> <li>2) To disclose the status of RC initiatives to stakeholders through the company website and the Environmental and Social Report</li> </ul>  |
| Developing RC among Our Group Companies                | <p>Measures Common to Our Group Companies</p> <p>(1) Environmental Protection</p> <ul style="list-style-type: none"> <li>To reduce energy intensity</li> <li>To reduce 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> <p>(2) Process Safety and Disaster Prevention (Same target as Nippon Shokubai)</p> <p>(3) Occupational Safety and Health</p> <ul style="list-style-type: none"> <li>To achieve zero injuries with loss of workdays</li> </ul> <p>(4) Chemical Safety</p> <ul style="list-style-type: none"> <li>To achieve zero problems related to chemical safety (legal or social problems)</li> </ul> <p>(5) Quality</p> <ul style="list-style-type: none"> <li>To receive zero serious quality complaints</li> </ul> <p>(6) Communication with Society</p> <ul style="list-style-type: none"> <li>To maintain a dialogue with stakeholders and implement reasonable information disclosure</li> </ul> <p>(7) Management System</p> <ul style="list-style-type: none"> <li>To effectively implement the management system</li> </ul> | <ul style="list-style-type: none"> <li>To provide company-wide deployment of accident prevention</li> <li>To improve the RC capabilities of Group companies through support activities such as RC interviews and reciprocal RC audits</li> </ul>  |

Definitions: <sup>1</sup> A method of comparing greenhouse gas emissions throughout the life cycle of a finished product incorporating chemical products and a comparison product containing no such chemical products when used by consumers and in other industries. The evaluation method calculates the chemical product's net contribution to GHG emissions reduction by determining the increased emissions when no such chemical product is used.  
<sup>2</sup> According to company standards



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 ongoing RC training with the goals of improving the knowledge base and raising company-wide awareness of Responsible Care.

In fiscal 2012, the Responsible Care Division of our head office provided this training to newly assigned managers throughout our company 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 2012 as well.



RC training of newly assigned managers



RC training for recently hired employees

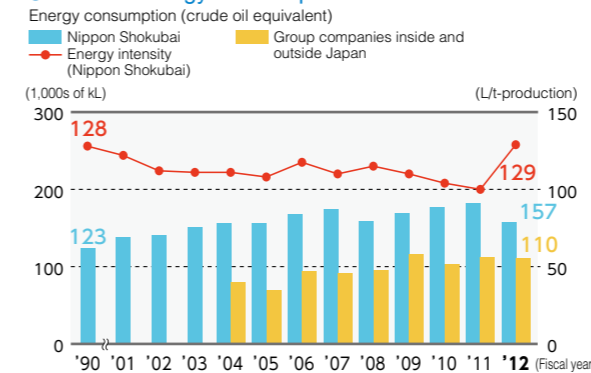
Initiatives for Preventing Global Warming

Promoting Energy Efficiency

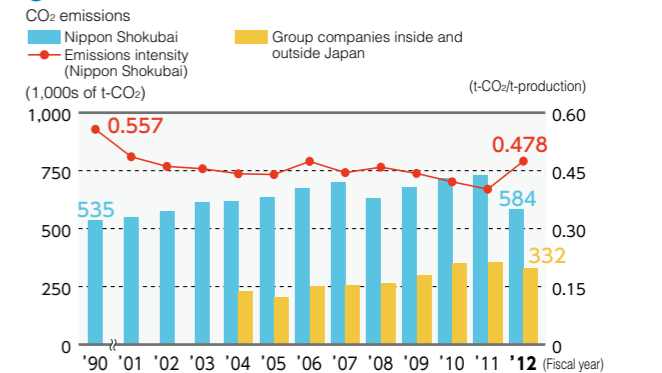
In an effort to achieve the goals of the Kyoto Protocol, the Japan Chemical Industry Association has adopted the goal of reducing the chemical industry's energy consumption rate per unit of production ("energy intensity") to 80% of the fiscal 1990 level as an average value for the period fiscal 2008–12. Nippon Shokubai has adopted a target for CO<sub>2</sub> emissions per unit of production ("emissions intensity") as well as an energy intensity target 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. Unfortunately, in fiscal 2012, our energy efficiency decreased along with the decrease in production attributable to the explosion and fire at our Himeji Plant. Our energy intensity increased by 0.4%, while our CO<sub>2</sub> emissions intensity remained at 14% below the fiscal 1990 level.

Trend in Energy Consumption



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



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> emissions intensity.

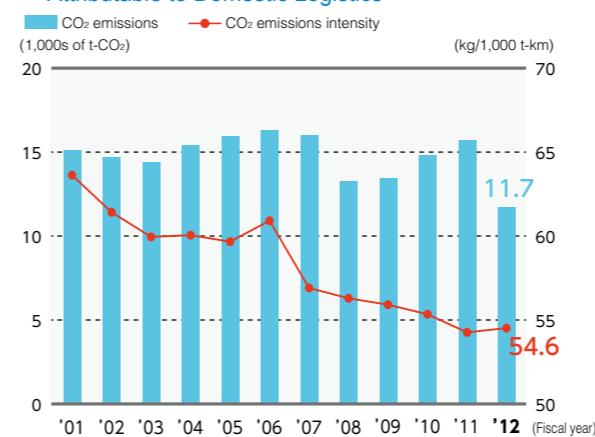
Although changing economic conditions can affect the amount of goods we ship and our CO<sub>2</sub> emissions, we are implementing initiatives to reduce CO<sub>2</sub> emissions intensity. These include modal shift, improved transport efficiency, introduction of digital tachometers (including GPS and 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 Emissions Intensity Attributable to Domestic Logistics



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.

Ton-kilometer

Transport ton-kilometer is a unit of transportation measurement referring to freight transport volume. As an index for precisely expressing transport as an economic activity, it is the multiple of freight haul distance (in kilometers) and the transported freight weight (tons).



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 Butsururyo Co., Ltd.

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.**

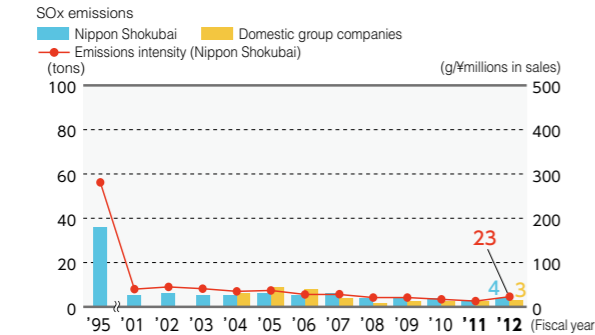
To control air pollution, we are taking steps to reduce byproduct oil and consumption of fuel oil. At the same time, we are converting fuel sources to natural gas while monitoring our emissions of SOx, NOx and dust.

In addressing water pollution control, we are endeavoring to reduce the environmental impact (reduction in chemical oxygen demand, or

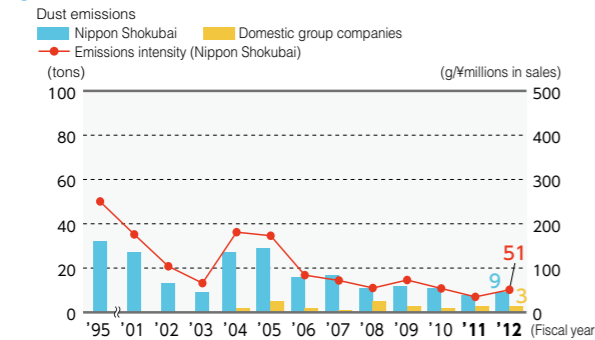
COD) of our wastewater by recovering wastewater from the production process and reusing it. We have also installed an activated sludge treatment system and a waste liquid combustion furnace.

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

Trend in SOx Emissions

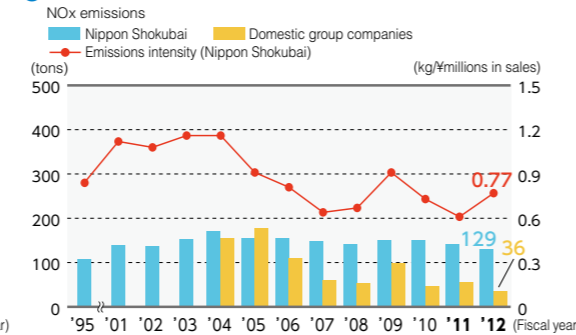


Trend in Dust Emissions

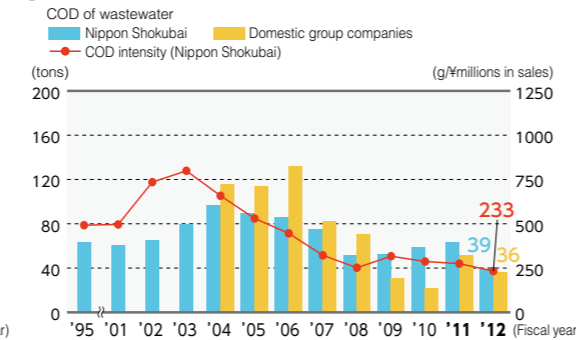


Note: Regarding the values agreed to by the city and prefecture, SOx emissions total 1/50th and dust emissions total 1/10th. NOx and COD totals are below the agreed values.

Trend in NOx Emissions



Trend in COD of Wastewater



Waste Reduction Initiatives

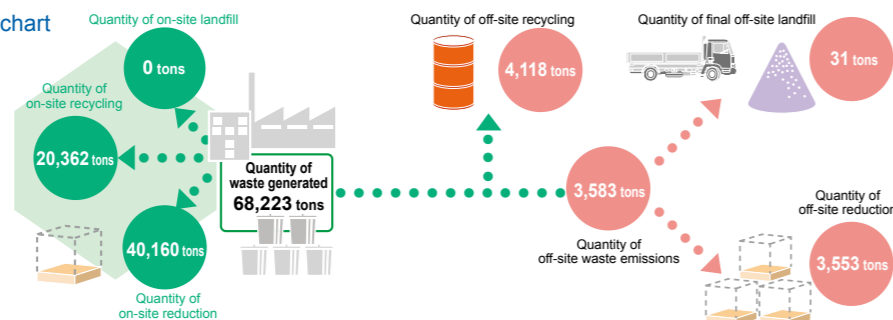
**We are striving to reduce the amount of waste subject to final disposal at off-site landfills.**

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.

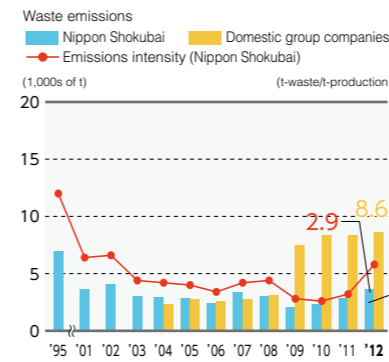
In fiscal 2012, we continued to implement our zero emissions policy by reducing the amount of waste subject to final disposal at off-site landfills through on-site treatment of production residues and by implementing thorough sorting for recovery and recycling.

Waste Flowchart

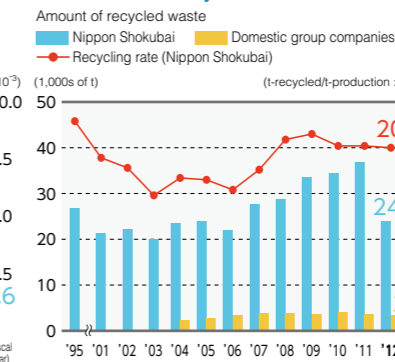


|  |  |   |   |
|--|--|---|---|
| <b>SOx</b><br>A hazardous air pollutant. This is a general term for sulfur oxides such as sulfur dioxide (SO <sub>2</sub> ) and sulfur trioxide (SO <sub>3</sub> ), which are generated mainly from the burning of fossil fuels. | <b>NOx</b><br>A general term for nitrogen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

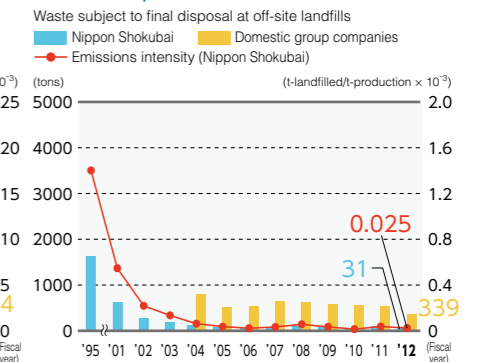
Trend in Waste Emissions



Trend in Amount of Recycled Waste



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



\* Increased as a result of the inclusion, in the scope of this report, of one additional group company in fiscal 2009 and another in fiscal 2010.

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 2012, we released 105 tons of chemical substances,

which represents a 32% decrease in emissions compared to fiscal 2005 levels. The emissions include the estimated chemical emissions attributable to the explosion and fire at the Himeji Plant.

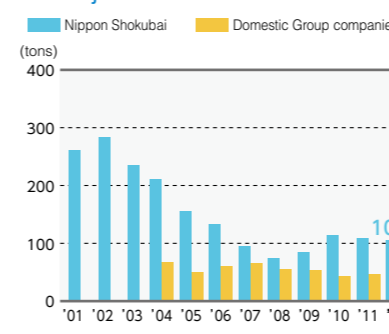
We remain focused on further reducing emissions toward our fiscal 2013 target of a 10% reduction from fiscal 2010 levels.

Top 10 Substances Subject to the PRTR Released in Fiscal 2012

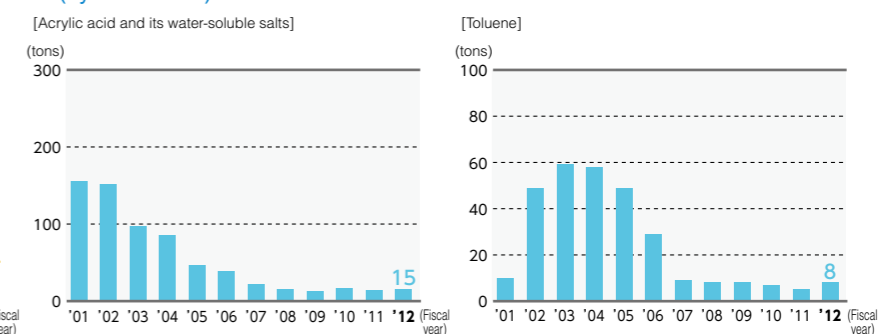
| No. | Government Designation No. | Substance Subject to PRTR                 | Released into Atmosphere | Released into Water | Total Emissions |
|-----|----------------------------|---|--------------------------|---------------------|-----------------|
| 1   | 405                        | Boron compounds                           | 0.00                     | 34.87               | 34.87           |
| 2   | 4                          | Acrylic acid and its water-soluble salts* | 14.96                    | 0.00                | 14.96           |
| 3   | 56                         | Ethylene oxide                            | 9.43                     | 0.00                | 9.43            |
| 4   | 321                        | Vanadium compounds                        | 0.00                     | 9.12                | 9.12            |
| 5   | 300                        | Toluene                                   | 7.79                     | 0.00                | 7.79            |
| 6   | 58                         | Ethylene glycol monomethyl ether          | 5.56                     | 0.00                | 5.56            |
| 7   | 400                        | Benzene                                   | 4.34                     | 0.00                | 4.34            |
| 8   | 80                         | Xylene                                    | 3.76                     | 0.00                | 3.76            |
| 9   | 150                        | 1,4-dioxane                               | 0.00                     | 3.20                | 3.20            |
| 10  | 8                          | Methyl acrylate                           | 1.88                     | 0.00                | 1.88            |

\* 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.

## Responsible Care Activities

### Environmental Protection Initiatives

#### 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, 2012–March 31, 2013  
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   | 52              | 1,401        | No pollution problems occurred.   | P18, 19       |
|  | 2. Global Environmental Protection Cost   | 13              | 1,838        | Energy efficiency efforts resulted in a 14% reduction in CO <sub>2</sub> emissions intensity from fiscal 1990 level.<br>● CO <sub>2</sub> emissions intensity<br>Fiscal 2011: 0.402 t/t → Fiscal 2012: 0.478 t/t<br>(28% reduction) → (14% reduction) | P17           |
|  | 3. Resource Recycling Cost  | 5               | 699          | We maintained zero emissions by continuing to sort and recycle our solid waste.<br>● Amount of waste subject to final disposal at off-site landfills<br>Fiscal 2011: 69 tons → Fiscal 2012: 31 tons   | P18           |
| Cost of controlling the environmental impacts of production and service operations occurring upstream & downstream (Upstream/downstream cost)        | Reuse of drum containers  | 0               | 21           | 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               | 566          | Enhancing 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               | 1,858        | 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               | 34           | Forest development initiatives  | P8            |
| Cost of dealing with environmental remediation (Environmental damage cost)   | —   | 0               | 7            | —   | —             |
| <b>Total</b>   |   | <b>70</b>       | <b>6,423</b> |   |               |

#### ● Economic Effects (Monetary Benefits) Resulting from Environmental Protection Initiatives

(millions of yen)

| Effect       | Amount       |
|--------------|--------------|
| Income       | 23           |
| Cost saving  | 1,123        |
|              | 1,027        |
| <b>Total</b> | <b>2,173</b> |

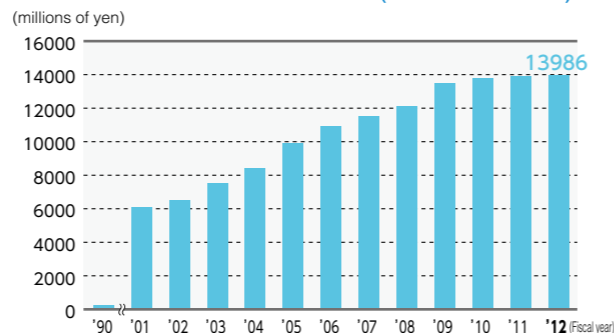
#### ● Reference

Total investment for the period: 9,462 million yen  
Total R&D expenses for the period: 10,758 million yen

#### 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)



#### 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.

## Responsible Care Activities

### Process Safety and Disaster Prevention Initiatives

#### Basic Approach to Safety Issues

We recognized 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.



Our corporate credo, “Safety takes priority over production,” is posted at every plant.

#### Promotion of Voluntary Safety Initiatives

Since our company was established, we have been promoting voluntary safety initiatives as we have been employing our own proprietary technology in our production operations. However, we experienced an explosion and fire (resulting in one fatality and 36 injuries) in the acrylic acid production facility of our Himeji Plant. Our entire company will implement preventive measures to restore public trust in our company and ensure that such an accident never recurs.

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

In an effort to more thoroughly visualize our safety initiatives and promote continuous improvement, we have introduced a safety management system at all our plants. Under this system, we have been 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 fiscal 2012, in recognition of their compliance with the provisions of the High Pressure Gas Safety Act, the six facilities of the Chidori Plant underwent recertification and were recognized by the Ministry of Economy, Trade and Industry as “Certified Completion Inspector and Certified Safety Inspector.” This certification enables these plants to conduct self-administered safety and completion inspections. Our Ukishima Plant obtained additional certification for one facility, resulting in a total of seven facilities having received such recognition.

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

| Fiscal year         | '08 | '09 | '10 | '11 | '12 |
|---------------------|-----|-----|-----|-----|-----|
| Number of disasters | 0   | 0   | 0   | 0   | 1   |

#### ■ 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 are implementing measures according to the plan in order to further improve safety from the perspective of both the tangible and intangible.

#### ■ Implementation of Various Emergency Drills

We systematically conduct various emergency drills every year at each plant and improve our emergency response ability by adopting improvements in subsequent drills. Using the lessons learned from the explosion and fire at the Himeji Plant, we are reviewing and strengthening our disaster prevention system as well as our education and training programs.



#### 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.

## Responsible Care Activities

### Occupational Safety and Health Initiatives

#### 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*) reporting 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 and electrical hazards as well as demonstration of the pinching and entanglement hazards of rotating machinery. Through this training, we are heightening our operators' sensitivity to risk.



Training with demonstration of entanglement hazard of rotating machinery



Experiencing the sensation of working at dangerous heights

#### KY Campaign

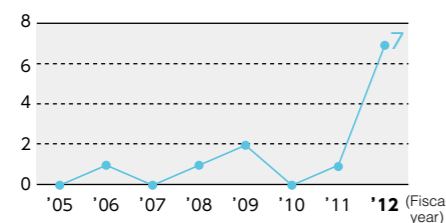
In an effort to prevent industrial accidents, we are committed to daily safety initiatives targeting work-related risks and have maintained a focus on our KY risk prediction campaign. We have been implementing group KY before work, KY for individual workers, and radio (Mobix) KY coordination between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

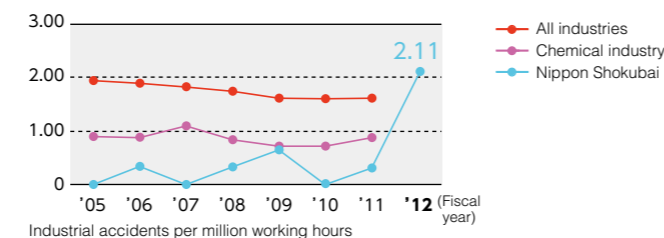
#### Occurrence of Industrial Accidents

In fiscal 2012, we experienced seven injuries with loss of workdays and five injuries without loss of workdays (among these, seven injuries with loss of workdays and three injuries without loss of workdays were attributable to the explosion and fire that occurred at the Himeji Plant). Our contractors experienced one injury with loss of workdays and two injuries without loss of workdays.

#### Trend in Injuries with Loss of Workdays



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



#### Risk Assessment

Since the introduction of the Occupational Safety and Health Management System, the company has undertaken organized risk assessments of the company and workplace, reducing or eliminating the sources of risks associated with work. With the recent increase in the number of young employees, we have segmented work processes and re-evaluated risks from the perspectives of young employees and have evaluated examples of risks from close-call incidents (*hiyari hatto*) and low-frequency work. We are fully engaged in improving safety in the workplace.

#### 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-containing products on occasion. Therefore, we are contacting employees and retirees regarding health issues and are implementing a phase-out of asbestos-containing products.

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 72 retired employees have been issued a Health Check Note. Six 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. In the future, we will continue to support our retirees and employees with asbestos checkups and consultations.

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 asbestos-containing 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 facilities or replace 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*) Reporting 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.

#### Risk Assessment

This technique identifies various risks in the workplace, estimates the extent of the risk from the seriousness of the anticipated industrial accident, and implements countermeasures beginning with those targeting the greatest risk.

## 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.

#### 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.)

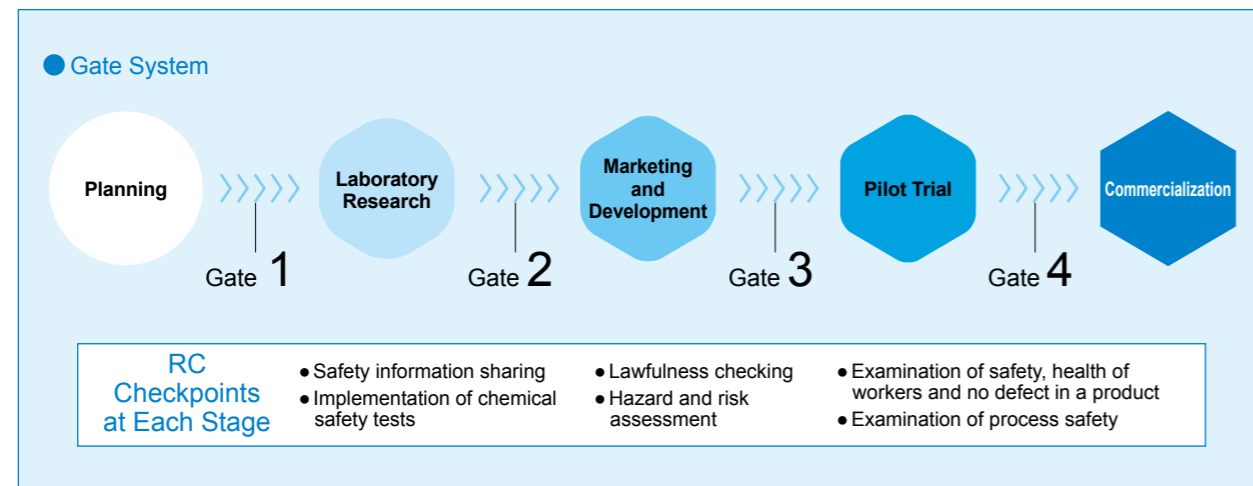
We will continue to promote such initiatives in order to ensure our Group in Europe remains in compliance with local laws and regulations.

#### Establishment of a Chemical Substance Management System

We have implemented a comprehensive chemical substance management system that can respond quickly to risk assessments, the issuance of SDS, and surveys from customers querying us on the chemical content of our products. We have created and launched this system by providing centralized management of various types of information encompassing chemicals, raw materials, hazardous materials, and regulations.

#### 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.

#### SDS

The 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 SDS 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 chemical substance management system. 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.

#### 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 SDS; 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.

#### 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, SDSs, and Yellow Cards for the logistics sector and provide information to customers in real time while promoting training sessions for our employees.

Sample warning label



(for use outside Japan)



(for use within Japan)

GHS pictographs



#### 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.

## 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

All our plants and all Group companies engaged in manufacturing and distribution both within and outside Japan have adopted a quality management system. We implement quality assurance initiatives from the product development stage through to manufacturing and delivery.

We are dedicated to continuous improvement of our quality management system to ensure our customers are satisfied with the stable high quality of our products and services.

#### Promoting Initiatives to Address Quality Issues

We respond quickly to any quality issues that arise and share information throughout the company by compiling it into a database to visualize the progress of the response. At the same time, we are preventing quality issues from occurring through company-wide distribution of case histories.

In addition, we provide appropriate advice on quality issues to Group companies inside and outside Japan and always proactively strive to prevent the emergence of quality issues.

#### 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 SDS. 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, Managing Executive Officer  
**Location:** 992-1 Aza-Nishioki, Okihama, Aboshi-ku, Himeji  
**Number of employees:** 891 at the Himeji Plant;  
 175 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

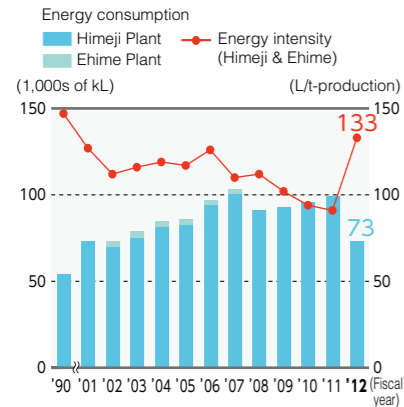
#### Fiscal 2012 Results of RC Activities

- On September 29, 2012, an explosion and fire occurred at the plant.
- Our employees suffered seven injuries with loss of workdays and three without loss of workdays; our contractors suffered one injury with loss of workdays and one without loss of workdays.
- We increased our energy intensity by 47%, our total emissions of substances subject to the PRTR by 15%, and our total waste generated by 29%, year-on-year.

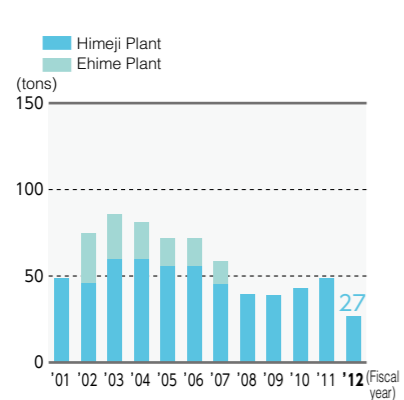
On September 29, 2012, our Himeji Plant was struck by a fatal explosion and fire. We offer our deepest condolences for the loss of life and we sincerely apologize to the bereaved family, to the injured, to neighboring residents, and to others who suffered the consequences of this tragic event. We are firmly resolved never to allow such an accident to recur and are committed to restoring public trust in our company as we conduct an honest review of the

workplace climate and process operations that existed prior to the accident. We are dedicated to fostering a culture of safety and to improving our safety assurance capabilities. Looking to our environmental performance, we intend to improve our energy intensity, which deteriorated during the past year.

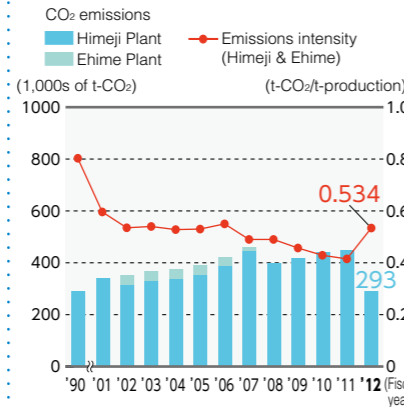
#### Trend in Energy Consumption



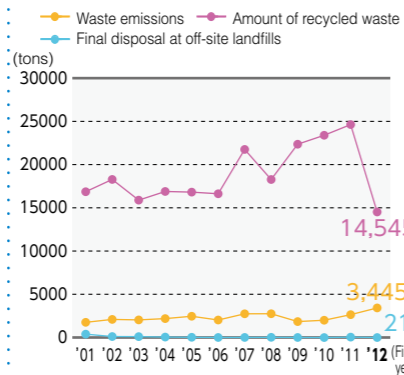
#### Trend in COD of Wastewater



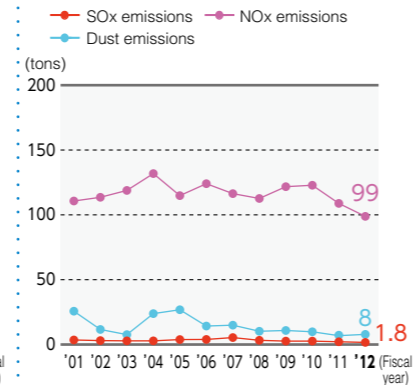
#### Trend in CO2 Emissions



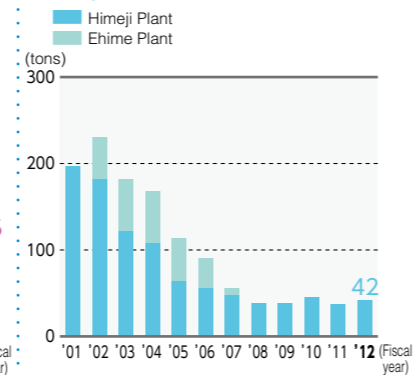
#### Trend in Amount of Waste, Recycled Waste, and Waste for Final Landfill Disposal



#### Trend in Emissions of SOx, NOx, and Dust



#### 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, Executive Officer  
**Location:** Chidori Plant  
 14-1 Chidori-cho, Kawasaki-ku, Kawasaki  
 Ukishima Plant  
 10-12 Ukishima-cho, Kawasaki-ku, Kawasaki  
**Number of employees:** 340 (including Research Center employees)  
**Products:** Ethylene oxide, ethylene glycol, ethanolamine, higher-alcohol surfactants, polymers for concrete admixture, and other products

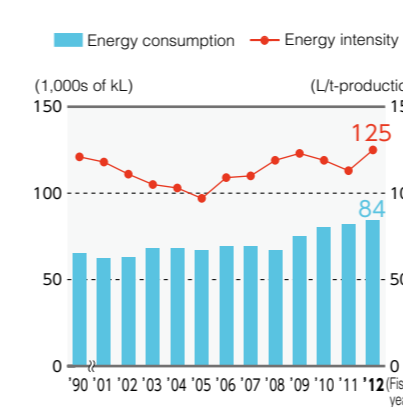
#### Fiscal 2012 Results of RC Activities

- In light of the accidents experienced by our company and others over the past year, we conducted a review of our safety measures and will continue to enhance safety.
- We are systematically implementing countermeasures against tsunamis resulting from large earthquakes and are conducting disaster drills. Regarding our safety record, one employee suffered an injury without loss of workdays. We reviewed our facility safety measures and safety standards.
- We proceeded with our planned initiatives to improve our energy efficiency, reduce waste, and reduce emissions of substances subject to the PRTR.

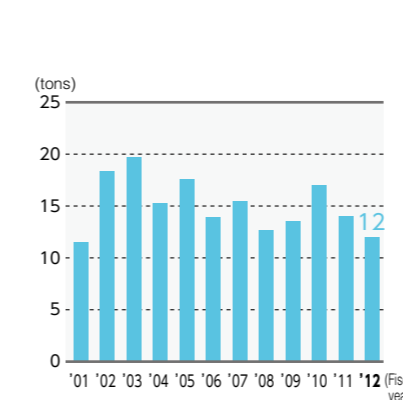
Considering the accident that occurred at the Himeji Plant in September of last year and incidents at other industrial complexes, we set out to overhaul our plant's safety measures and established and enhanced a more concrete emergency response. In addition, we are systematically incorporating safety drills and other measures to respond to tsunamis caused by large earthquakes. Our updated application for certification as an inspector under the High Pressure Gas Safety Act was also approved. In terms of our safety record, one employee suffered an injury without loss of workdays. As a

result, we undertook to review our facilities and safety standards. Moreover, we carefully conducted "KY" (*kiiken yochi*, or "risk prediction") campaigns, "close-call" incident (*hiyari hatto*) reporting campaigns, and risk assessments while also taking steps to improve our operations. We are steadily implementing plans to reduce waste, improve energy efficiency, and reduce the emissions of PRTR-controlled substances. We will continue to promote our RC initiatives with the goal of achieving a safe and reliable plant.

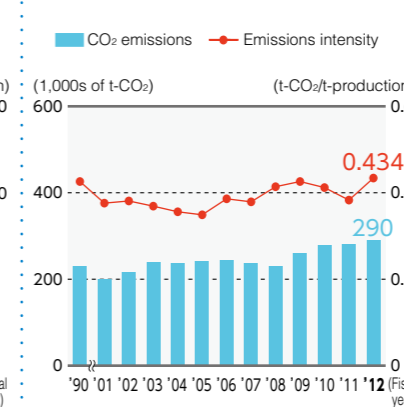
#### Trend in Energy Consumption



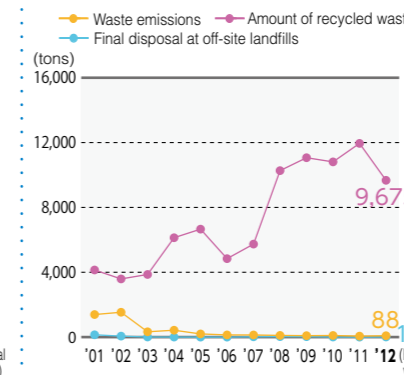
#### Trend in COD of Wastewater



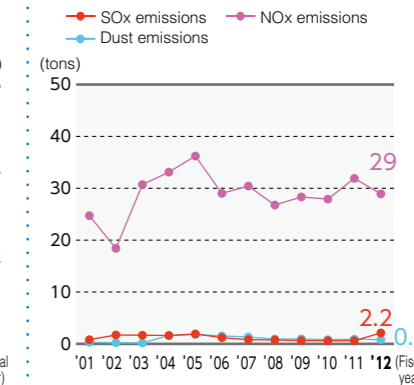
#### Trend in CO2 Emissions



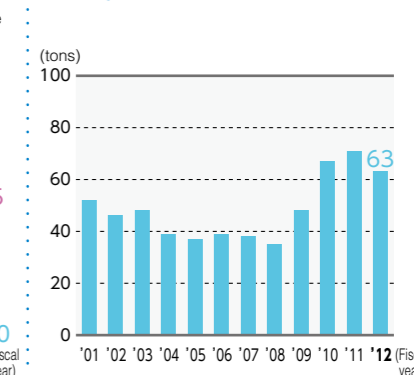
#### Trend in Amount of Waste, Recycled Waste, and Waste for Final Landfill Disposal



#### Trend in Emissions of SOx, NOx, and Dust



#### 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 Otabi-cho, Suita  
 Number of employees: 82  
 Products: Acrylic resins for adhesives, resins for paints, and other products

Fiscal 2012 Results of RC Activities

- We achieved zero industrial accidents, zero facility disasters, zero problems related to chemical safety, and zero serious quality complaints.
- We are maintaining our low levels of emissions of substances subject to the PRTR.
- We reduced the volume of waste generated by continuing to recover sorted waste.

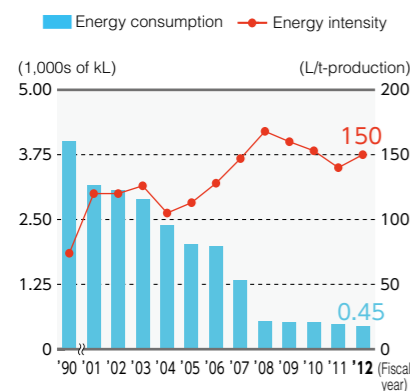
Continuing the performance we have demonstrated since fiscal 2007, the Suita Plant experienced zero industrial accidents (including injuries without loss of workdays) and zero facility disasters. As we do not view this result with self-satisfaction, we will continue to work toward accident prevention through the steady adoption of various safety initiatives.

Moreover, concerning last year's accident at the Himeji Plant in September, we are committed to implementing measures to prevent such accidents through company-wide deployment.

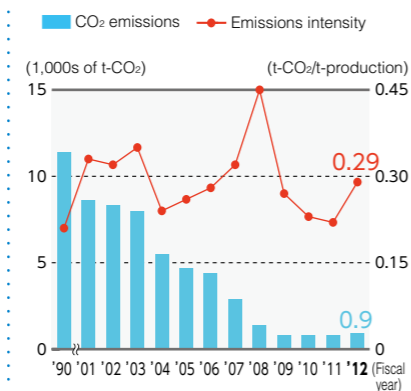
Among our environmental protection initiatives, we have been implementing ongoing steps to improve our recycling rate through sorting of waste. This commitment had enabled us to further reduce our waste emissions.

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 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.

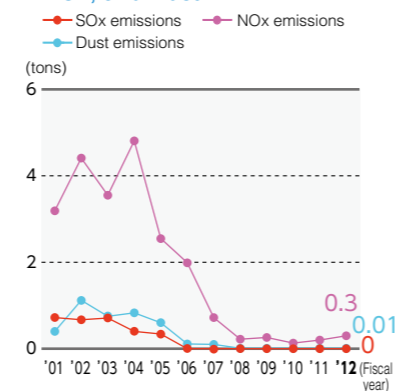
Trend in Energy Consumption



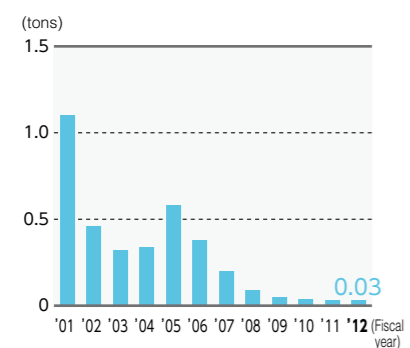
Trend in CO<sub>2</sub> Emissions



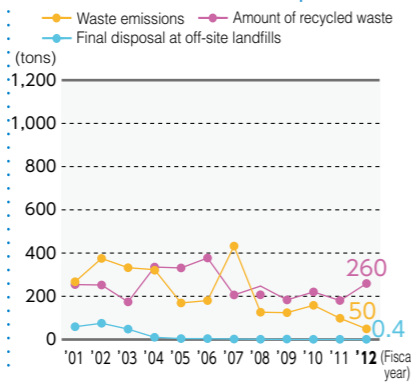
Trend in Emissions of SO<sub>x</sub>, NO<sub>x</sub>, and Dust



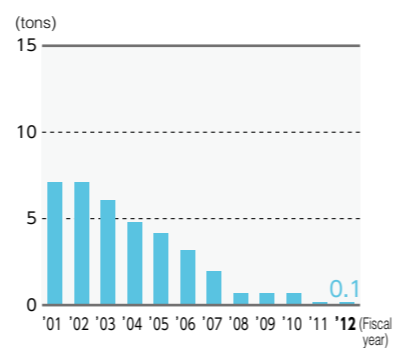
Trend in COD of Wastewater



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



Trend in Emissions of Substances Subject to the PRTR



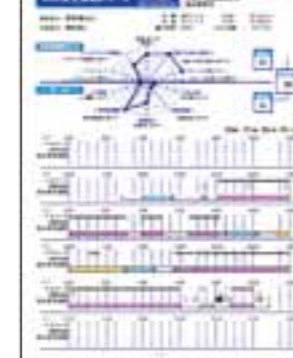
Group Companies in Japan

Nisshoku Butsuryu Co., Ltd.

The Nisshoku Butsuryu Group continues to sharpen its focus on environmental protection, distribution safety, and distribution quality. At the same time, it aims to become an even better logistics company that warrants the full confidence of shippers and customers alike for implementing a management system according to ISO international standards. The following are examples of its initiatives.

- Reducing the threat of global warming and mitigating environmental impacts through eco-friendly logistics initiatives focused on energy-efficient driving methods; green management; and modal shifts and transport efficiency.
- Introducing an OHSAS 18001-compliant Occupational Safety and Health Management System in fiscal 2012 and continuing to conduct risk assessments of hazardous and toxic tasks such as in-yard material handling operations
- Proactively pursuing a commitment to safety management (transportation safety management) as a truck transport company and introducing an advanced driving information system (a combination of digital tachometers, GPS units, and drive recorders) according to risk evaluations to support energy-efficient driving methods, safe driving, and accident response
- Systematically conducting voluntary checks of tankers in an effort to prevent leakage during transport

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



Eco safe driving report

Green Management

Green management is intended to improve management effectiveness while promoting voluntary systematic environmental measures. The Ministry of Land, Infrastructure, Transport and Tourism of Japan teamed up with the Foundation for Promoting Personal Mobility and Ecological Transportation to publish a green management promotion manual focused on the transportation industry. The Foundation handles certification and registration by screening companies that have taken the initiative to exceed the specific levels outlined in this manual.

Nippon Polyester Co., Ltd.

All the company's employees are engaged in RC initiatives in fiscal 2012 and have established targets in six areas: environmental protection; process safety and disaster prevention; occupational safety and health; chemical safety; quality; and communication with society.

For its environmental efforts, Nippon Polyester has reduced its industrial waste emissions and plans additional steps with innovations intended to achieve further reductions.

Regarding environmental targets for products and services, the company strives to design products containing no hazardous chemical substances while implementing steps to make manufacturing and sales more eco-friendly.

Unfortunately, the company experienced four industrial accidents in fiscal 2012. All workplaces reviewed their facilities to identify unsafe operations as well as risks of pinching and entanglement; they then proposed improvements to both facilities and management aspects. The company's goal is to inculcate a high level of safety awareness under the slogan "Let's achieve zero disasters at Nippon Polyester!"



Safety meeting

Chugoku Kako Co., Ltd.

In fiscal 2012, Chugoku Kako experienced zero facility disasters and zero industrial accidents. Regarding process safety and disaster prevention, the company undertook verification of facility operation interlocks, a firehose drill using firefighting pumps, and nighttime emergency response drills in addition to its conventional initiatives. As for occupational safety and health, the company enhanced employee safety awareness by conducting "close-call" incident (*hiyari hatto*) reporting campaigns and safety patrols. The company is committed to future RC activities in the interests of maintaining operational safety.



Firehose drill

Group Companies in Japan

Tokyo Fine Chemical Co., Ltd.

In fiscal 2012, Tokyo Fine Chemical completed a maintenance audit of its ISO 9001 registration and renewed its EcoAction 21 environmental management system while resolving to further strengthen its quality and environmental management systems.

In terms of process safety and disaster prevention, the company achieved its target of zero facility disasters and zero facility accidents. As for its emergency response, the company conducted a joint disaster response drill at its plant yard in order to practice firefighting in cooperation with the local fire department. The company also conducts training to ensure a rapid response can be provided.



A joint disaster response drill with the local Yokosuka Fire Department involving fire hose practice with the chemical firefighting truck and the self-defense disaster response team

Nippon Polymer Industries Co., Ltd.

Among its environmental protection initiatives for fiscal 2012, Nippon Polymer conducted waste reduction activities focused on disposal of filter media resulting from filtration of products as well as reduction of the volume of wastewater discharged; however, the company was unable to achieve its goals.

In other areas, the company improved the green space on its premises. It consolidated its various scattered green spaces resulting from production-related facility expansions located around its warehouse and hazardous material tank farm, creating beautiful and more extensive green spaces.



Improved green space by the product/raw material warehouse  
Improved green space by the hazardous material tank farm

Nihon Jyoryu Kogyo Co., Ltd.

Nihon Jyoryu Kogyo's environmental protection initiatives were focused on waste generation, emissions of substances subject to the PRTR, and energy efficiency. Their goal was to maintain energy and emissions intensity levels at their respective fiscal 2010 levels. As a result of their efforts, the company was able to achieve its goals for fiscal 2012.

In the area of occupational safety and health, the company increased its work improvements and safety awareness through risk assessments; through "KY" risk prediction, "close-call" incident (*hiyari hatto*) reporting, and "5 S" campaigns; and through reviews of industrial accidents as part of a training program. The company extended its record of zero injuries with and without loss of workdays since fiscal 2011.

Regarding its "5 S" campaign, Nihon Jyoryu Kogyo implemented improvement initiatives and achieved their goals in relation to product quality and the environment.



Reporting at environmental meeting  
The finger-pointing safety chant was recognized with the Prize for Excellence at a safety meeting

NIPPON NYUKAZAI CO., LTD.

Regarding the primary initiatives in the area of occupational safety in fiscal 2012, Nippon Nyukazai worked on improving safety awareness through small group activities and promoted improvements in the work environment through the following.

- "5 S" campaign with the goal of zero accidents,
- Basic safety campaigns such as "KY" risk prediction and "close-call" incident (*hiyari hatto*) reporting,
- Reductions in hazard level III by means of OSHMS.

In terms of process safety and disaster prevention, the company engaged in systematic maintenance based on the level of importance attributed to the various pieces of machinery.

The company conducted earthquake and tsunami drills as part of its comprehensive emergency drills, provided emergency response training for the manufacturing section, and confirmed the quick reporting system for use at the outbreak of an abnormal situation.

In the future, the company will strive for greater operational safety as well as waste reduction while further promoting and enhancing its RC initiatives.



Cardiopulmonary resuscitation workshop (Kawasaki Plant)

First-aid activities (Kashima Plant)

Nippon Chemicals Co., Ltd.

Nippon Chemicals continued to implement its integrated internal audit under ISO 14001 from the preceding year, and has now maintained its certification of ISO 9001 registration for more than ten years. In October, the company underwent screening by a certification organization and renewed its registration.

The company provided a briefing session on revisions to laws and ordinances and conducted a review and revisions of all product SDSs and all product labeling in response to CLP Regulations (Classification, Labeling and Packaging of substances and mixtures) of the EU as well as revisions of the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. and the Industrial Safety and Health Act.

The company experienced several injuries without loss of workdays in fiscal 2012 and remains committed to ensuring stable operation by working to prevent any recurrence.



In-house workshop on revisions to laws and ordinances

RC spot audit for industrial accidents

CLP Regulations

On January 20, 2009, regulations were enacted regarding classification, labeling, and packaging of chemicals according to the EU's GHS for the purpose of communicating risks.

Group Companies outside Japan

PT. NIPPON SHOKUBAI INDONESIA

PT. Nippon Shokubai Indonesia was presented with its eighth PROPER green level recognition (a public disclosure program for environmental performance) from the central government of Indonesia. The company recorded 12 consecutive years without a lost time injury and achieved its RC targets by introducing the Corporate Philosophy of "TechnoAmenity" and by taking a new approach under the slogan "The person who noticed is responsible."

The company is committed to implementing the following initiatives through its environmental and occupational safety management systems:

- aiming at zero landfill disposal of hazardous and toxic waste and promoting the "3 Rs" (reuse, reduce, and recycle); and
- turning off lights and air conditioners except when necessary as an energy conservation measure and promoting a related campaign by means of stickers.

The company will continue to uphold its record of zero industrial accidents by means of the following initiatives:

- conducting four rounds of "KY" risk prediction and simulated-risk experience to improve employee safety awareness;
- evaluating the risks of transporting chemical substances under a product stewardship and distribution program through an audit of distributors; and
- conducting natural disaster drills for tsunamis and providing training in the handling of manufactured products every two years.



Presentation of PROPER green level award from the central government



Presentation of Zero Accidents Award



Green Industry Recognition Award



Drills for tsunamis and other natural disasters



GHS briefing session for high school students

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

The year 2012 marked a new beginning for NA Industries, Inc. (NAI). In spring of that year, the company succeeded in launching a new absorbent polymer plant. The first goal of 2012 was to foster a strong safety culture and promote teamwork. The plant operators learned cardiopulmonary resuscitation and first aid, while the employees of NAI and the contractors conducted pre-construction Process Hazards Analysis as well as pre-startup safety reviews. In addition, the employees and management representatives organized a new plant safety committee. American Acryl, the plant's joint venture partner, and NAI discussed risks associated with the facilities of both companies through the plant safety committee on site. By introducing the E-Notify system offered by Emerge Systems, Inc., NAI can provide a timely emergency reporting service and can issue accident and disaster alerts to local authorities.

Finally, as part of their open communication with the public, NAI is actively participating in the Seashore Community Advisory Panel, an organization created by neighboring residents of the plant.



Superabsorbent polymer plant

Singapore Acrylic Pte Ltd.

Every year, the company recognizes May as safety enhancement month as part of an ongoing safety promotion initiative. This activity includes safety dialogue, a safety exhibition, a safety slogan campaign, a safety quiz, indoor safety training (covering hearing safety and breathing apparatus), and disaster response drills. Other activities include easy-to-understand display of personal protective equipment inside the plant as well as the posting of photos of disasters where they occurred.

All shift teams conduct a regular "KY" risk prediction campaign to help prevent accidents. In addition, it conducts annual "5 S" competitions and many other related projects. As a signature project for 2012, the company updated a pipe rack and labeling for easier operation and enhanced safety. Furthermore, the company re-examined its risk assessments of all activities in order to improve employee safety awareness. Everyone at the company is committed to ongoing improvement of operational safety, achievement of zero disasters, and promotion and expansion of RC initiatives.



Updating of pipe racks and labeling



Display of personal protective gear inside the plant



Group Companies outside Japan

NIPPON SHOKUBAI EUROPE N.V. (Belgium)

In 2012, the company revised its confined space operation procedures, listed all confined space operations, and improved safety measures as much as possible. Furthermore, all operators were involved in emergency response drills targeting confined space operations.

The company also installed facilities for securing a safety line to the roof of the production facility. For example, a worker involved in work at height, such as replacing a fan, can link to a metal cable for fall prevention. Regarding steam tracing, the company insulated critical areas that carried the risk of contact with a worker. It also improved the ergonomics of the filter facilities. These innovations contribute to effortless replacement work. In addition, measures have been taken to prevent contamination with insects or other foreign objects.



Confined space operation drill



Confined space operation drill

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

In 2012, each workplace unit at Sino-Japan Chemical participated in the Annual Safety and Hygiene initiative, with all cooperating and sharing their experiences. Employees were able to expand their knowledge of occupational safety and hygiene by participating in initiatives while improving the work environment and self-directed skills upgrading. At the same time, they improved personal safety awareness and risk prediction through occupational safety and hygiene lectures while renewing their risk awareness in order to reduce hazards.



ISO 14001



Lectures on occupational safety and hygiene

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

Nisshoku Chemical Industry continued its environmental, safety, and quality assurance production initiatives in 2012. The company obtained certification for Standardization of Production Safety from the government of China in June 2012. The company installed a rainwater drainage monitoring facility to meet the government's new environmental regulations and updated their activated sludge treatment facility.

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



Certification for Standardization of Production Safety



New activated sludge treatment facility



Firefighting drill

The Japan Chemical Industry Association (JCIA) issued the "Independent Verification – Opinions" for our Environmental and Social Report 2013 (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.

「2013 環境・社会報告書 CSR経営の実践」  
第三者検証 意見書

2013年6月6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  
レスポンスブル・ケア検証センター長  
高瀬 純治

**■検証の目的**  
本検証は、株式会社日本触媒が作成した「2013 環境・社会報告書 CSR経営の実践」(以後、報告書と略す)を対象として、下記の事項について、化学業界の専門家として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) レスポンスブル・ケア活動の評価  
4) 報告書の特徴

**■検証の手順**  
・本社において、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、及びそれぞれの責任者より資料提示と説明を受けることにより行いました。  
・吹田工場及び研究所において、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への質問とその資料提示及び説明を受けること、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、吹田工場及び研究所において、合理的な方法を採用しています。  
・調査した範囲において、数値は正確に算出・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、文章のわかりやすさについて若干の指摘をしましたが、現報告書では指摘事項は修正されています。  
3) レスポンスブル・ケア活動の評価について  
・国内外のグループ企業に対し、本社と同様のRC目標を設定し、ヒヤリング・観察等を通じRC活動のレベル向上に努力されている点を評価いたします。  
・設備災害、労働災害、ヒヤリハット、品質トラブル等をデータベース化し、情報の共有化を図られている点を評価いたします。更に進んで、共有化した効果を知る仕組みを構築されることを期待します。  
・新任基幹職等に対し行われるRC教育のテキストは、内容が充実しています。  
・吹田工場は、民家と隣接した立地にあり、地域住民からの苦情が問題になると思われますが、今年度は苦情が1件もなかったことを評価いたします。今後共、地域との交流を深め、評判向上に努められることを期待します。  
4) 報告書の特徴について  
・今年度、絶路製造所で爆発・火災事故が起こったことは、まことに残念なことです。これに関しページを翻いてきちんと報告されている点を評価いたします。

以上

## Outline

|                                  |  |
|----------------------------------|--|
| Established                      | August 21, 1941  |
| Common stock                     | ¥25,000 million  |
| Net sales                        | ¥269,500 million (consolidated)      ¥168,100 million (non-consolidated)   |
| Number of employees              | 3,938 (consolidated)      1,986 (non-consolidated)   |
| Osaka Office                     | Kogin Bldg., 4-1-1 Koraibashi, Chuo-ku, Osaka 541-0043, Japan<br>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<br>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<br>As of March 31, 2013       |

## Major Product Lines

### Basic Chemicals

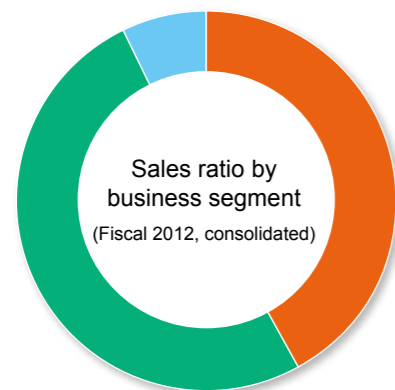
Acrylic acid, acrylates, ethylene oxide, ethylene glycol, ethanolamine, higher-alcohol surfactants, glycol ether

### 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



|                                    |     |
|------------------------------------|-----|
| Basic Chemicals                    | 42% |
| Functional Chemicals               | 51% |
| Environmental Products & Catalysts | 7%  |

## Group Companies

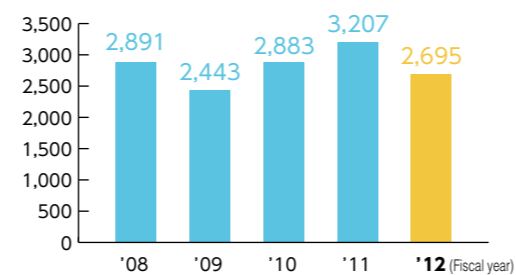
### <In Japan>

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.\*, NIPPON SHOKUBAI TRADING CO., LTD.\*, Nihon Joryu Kogyo Co., Ltd.\*, Umicore Shokubai Japan Co., Ltd., Nippon Polymer Industries Co., Ltd., Japan Composite Co., Ltd.

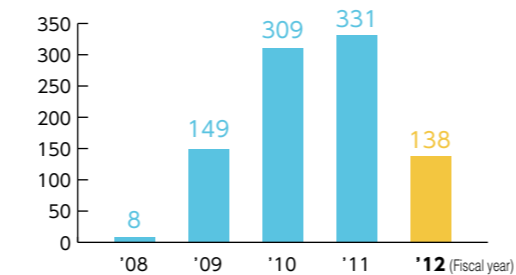
### <Outside Japan>

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

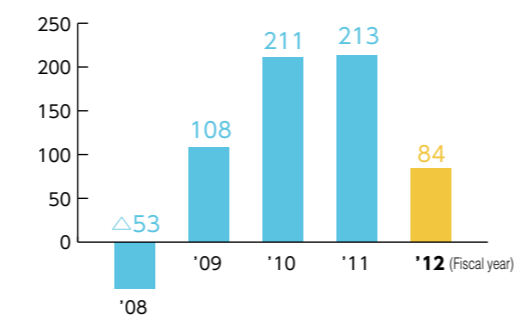
Net sales (consolidated)  
(100 millions of yen)



Ordinary income (consolidated)  
(100 millions of yen)



Net income (consolidated)  
(100 millions of yen)



## Nippon Shokubai — A Part of Your Daily Life



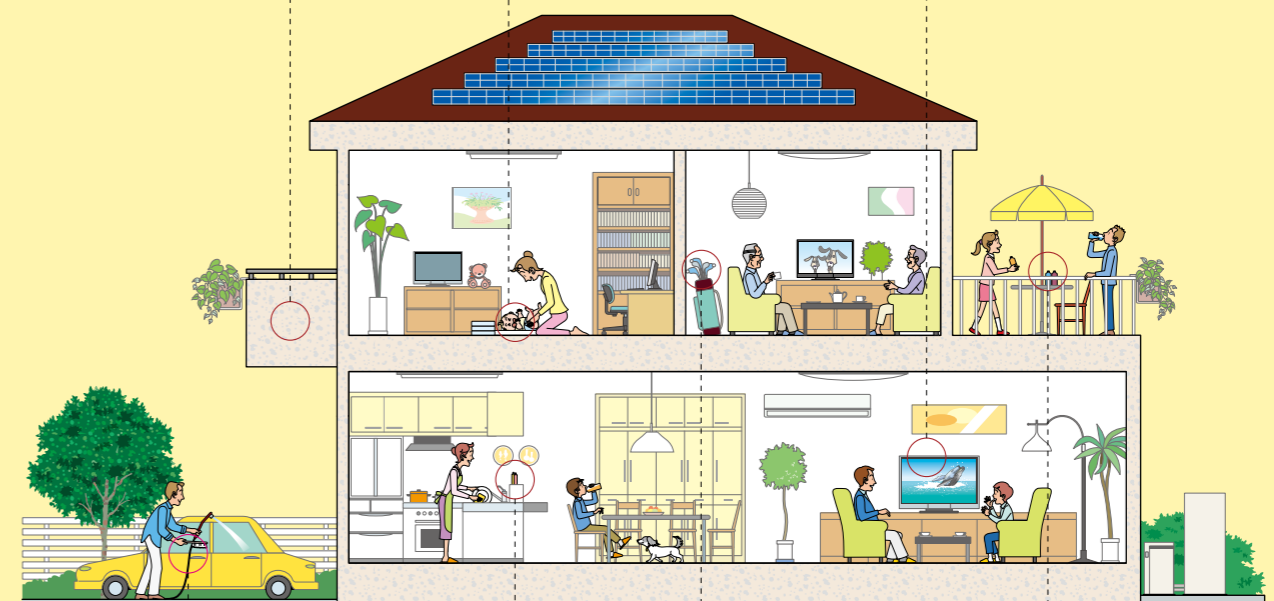
Acrylates are used as ingredients in eco-friendly water-soluble paints.



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.

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NIPPON  
SHOKUBAI

# TechnoAmenity

Providing affluence and comfort to people and society,  
with our unique technology.