



Environmental Report

2003

>>> CONTENTS

Greetings from the President and CEO	1	Eco-products	10
Environmental Management	2	Environmental Activities in Fiscal 2002	12
Promoting Environmental Management	3	Regional Exchange	22
Environmental Management at the Takefu and Kashima Plants	4	Production Diagram for Major Products	23
Eco-products and Technology	8	History of Environmental Activities	24
		Corporate Profile	25

>>> EDITORIAL POLICY

This Environmental Report has been published to present Shin-Etsu Chemical's current environmental activities, previous performance, and its plans for future activities. This year's report highlights activities at production plants, focusing on efforts at the Takefu and Kashima plants. (Page 4)

Period covered by this report:
April 1, 2002 through March 31, 2003

The 21st Century is often referred to as “the Century of the Global Environment.” International efforts to confront global environmental problems culminated in the “Earth Summit” held in Rio de Janeiro in 1992 (the UN Conference on Environment and Development) and the Johannesburg Summit in 2002 (the World Summit on Sustainable Development). Efforts are also being made in Japan to create a recycling-oriented society, shifting from a mass production, mass consuming and mass disposal model to a society that incorporates the 3R principle—recycling, reducing and reusing.

Among the various environmental measures being implemented in Japan and around the world, Shin-Etsu and the Shin-Etsu Group have increased the degree of importance given to environmental matters in their corporate management. Safety and environmental protection are the top priorities, with the focus on the management goal of “Safety and Environmental Protection First” forming an integral part of our business operations.

As part of its environmental management, the Shin-Etsu Group not only implements stringent measures to prevent air and water pollution but also to manage and reduce the emission of hazardous substances. We are proactively adopting pollution-control technologies and equipment, and taking steps to conserve resources and energy. We have also actively developed products with a low environmental impact, many of which are highly regarded in the marketplace.

Taking a pro-active stance regarding environmental protection, Shin-Etsu has invested approximately ¥17.6 billion for environmental protection over the past 10 years. In 1998 the Shin-Etsu Group adopted an Environmental Charter, presenting guidelines for the promotion of environmental management. All of the major manufacturing facilities of Shin-Etsu Chemical Co., Ltd., Shin-Etsu Handotai Co., Ltd. and Shin-Etsu Quartz Products Co., Ltd. in Japan and overseas have acquired ISO 14001 certification for their environmental management systems, and we are now working to obtain this certification for the remaining facilities.

This Environmental Report has been drawn up to describe and explain our environmental protection activities and everyday environmental control measures plus the environmental safety measures in effect at our manufacturing plants as well as to describe our products and materials that help protect the environment. It is our sincere hope that this report will assist our customers, shareholders and investors as well as the people in the communities near Shin-Etsu’s facilities to deepen their understanding of our environmental management.

We at the Shin-Etsu Group firmly believe that environmental protection is the most important challenge we face—now and in the future. At each of our manufacturing facilities and business locations throughout the world, we seek to fulfill our duty as a good corporate citizen and to maximize our efforts to protect local communities as well as the global environment.



Chihiro Kanagawa
President & CEO
October 2003

The Shin-Etsu Group adopted its Environmental Charter in August 1998, in pursuit of the realization of a sustainable society. This Charter sets forth the basic philosophy and action guidelines for environmental management for the entire Group to follow in the course of its global expansion. Following the management goal of “Safety and Environmental Protection First,” Shin-Etsu has developed its business with due consideration to the safety and protection of the environment.

Each of Shin-Etsu’s plants devises its own environmental policy based on the Environmental Charter, making efforts to reduce by-products and emissions, and control its environmental impact. In addition, comprehensive safety measures have been implemented to prevent fires that cause substantial environmental damage and pose a threat of injury or loss of life.



ENVIRONMENTAL CHARTER

Basic Philosophy

Shin-Etsu Chemical Co., Ltd. recognizes that protection of the global environment is one of the highest priorities for humanity. Our goal is to contribute to the creation of a society capable of sustainable development, by being fundamentally committed to considering the environment in all aspects of our business activities.

Action Guidelines

1. In order to promote environmental protection activities, Shin-Etsu organizes and facilitates them to enable it to carry out environmental management activities effectively.
Shin-Etsu aims at accurately grasping any environmental effects caused by its business activities, and establishes technically viable objectives focused on the reduction of wastes and harmful materials, conservation of resources and energy, and the recycling of materials. Shin-Etsu regularly revises its goals to pursue continual improvements in its environmental performance.
2. Shin-Etsu observes all applicable regional, national, and international laws, regulations, and agreements related to the environment. Moreover, Shin-Etsu establishes its own standards to prevent environmental pollution.
3. Through education and internal communications, Shin-Etsu strives to instill a better understanding among all employees of its environmental charter and raise awareness of environmental issues. Shin-Etsu promotes environmental protection activities from a wide-ranging point of view, expanding from small regional communities to the entire global society.
4. In an effort to minimize any adverse environmental effects in developing new products and technologies, Shin-Etsu aims at assessing their environmental-friendliness, from fundamental research and design to manufacture, distribution, usage, and disposal.
- 5.

››› PROMOTING ENVIRONMENTAL MANAGEMENT



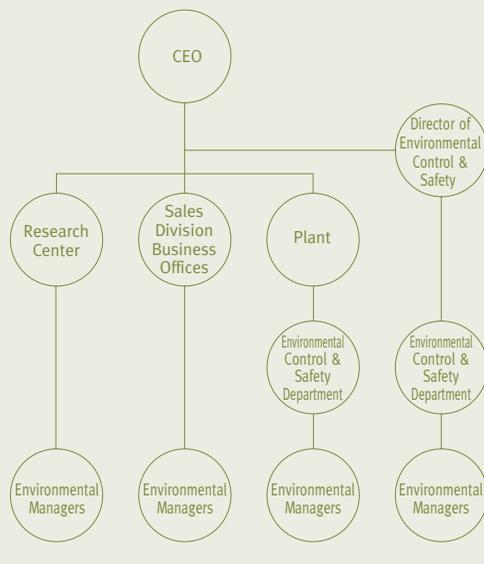
Fumio Akiya
Senior Managing Director in Charge
of Environmental Control & Safety

The aim of Shin-Etsu's environmental management is to reduce environmental impact and risks, and improve resource efficiency. As a leading producer of chemicals and other materials, moreover, we seek to employ cutting-edge technical developments to reduce the environmental impact on society overall, and provide new materials that improve resource efficiency. In effect, it is our desire, through the promotion of environmental management in both our manufacturing operations and our R&D activities, to achieve continuous environmental improvements, and contribute to the creation of a sustainable society.

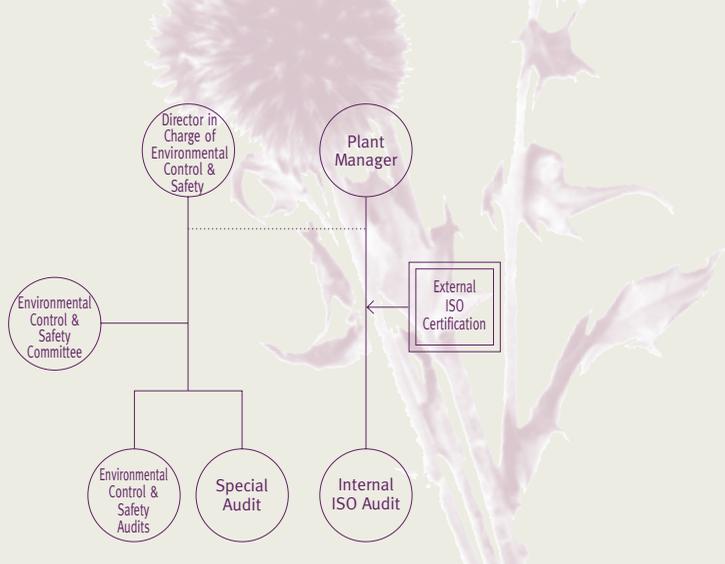
THE ORGANIZATION AND SYSTEMS OF ENVIRONMENTAL MANAGEMENT

Shin-Etsu established our Environmental Control & Safety Committee, chaired by the Director in Charge of Environmental Control & Safety to address specific issues related to environmental management. Environmental management policies and targets, health and safety guidelines, and related matters are coordinated by the Environmental Control & Safety Department at the Company's headquarters. The environmental control & safety department at each plant provides technical support regarding environmental protection to the various manufacturing departments, and handles all relations with external institutions, such as local government bodies, relevant government agencies, and industry associations.

Regular environmental safety inspections and special audits are also conducted to ensure proper administration of environmental protection and safety activities.



Organization



Committee and Auditing System

>>> ENVIRONMENTAL MANAGEMENT AT THE TAKEFU AND KASHIMA PLANTS

All subsidiaries, affiliates, and manufacturing facilities of the Shin-Etsu Group have implemented independent environmental policies based on its Environmental Charter, and have active environmental protection programs.

In this year's Environmental Report, we highlight activities at production plants, focusing on efforts at the Takefu and Kashima plants.

ENVIRONMENTAL MANAGEMENT AT THE TAKEFU PLANT

In 1967, the Takefu Plant commenced the manufacture of yttrium oxide (Y₂O₃) using proprietary technology. Using this as a springboard, the plant diversified into the production of various rare earth oxides, compounds, and metals, its product line expanding to its current composition. Rare earths and rare earth magnets are core products, and this is the only plant in the world to boast integrated manufacturing of rare earth magnets from raw materials to the finished product. The plant employs state-of-the-art manufacturing technology to answer the needs of the market, while supporting further advances in electronics and hi-tech materials.

In addition to rare earth products, silicone products have become another core business.

THE TAKEFU PLANT

Location : 1-5, Kitago 2-chome, Takefu-shi, Fukui
 Established : May, 1945
 Site area : Approximately 400,000m²
 Primary products : Rare earths, Rare earth magnets, Silicones



Takefu Plant

We asked Mr. Kakehashi, Manager of the Environmental Control & Safety Department to tell us about environmental programs at the Takefu Plant.



Water emission monitoring equipment

Our concern for the environment is focused on water pollution control due to the fact that our emissions into the atmosphere are extremely low. Because underground water pumped from a well on the site is used as cooling water then discharged to a river, our activities are closely connected with quality of life for the surrounding residents. In addition, because water from the river is used for agricultural purposes, we ensure that the water we discharge is well within legally approved standards.

The site of the plant is solely industrial land, but there are residential areas adjacent. To promote understanding, we invite area representatives to participate in our accident-response training. Also, out of consideration for nearby residents, at night we refrain from using our paging system and use alternative methods of communication.

In addition to daily efforts to protect the riverine environment, we often join in clean-up campaigns in cooperation with residents, local firms, and schools.

We make maximum effort to reuse the waste products of our post processes, and have taken the initiative in increasing the recycling of waste generated on site. The electricity consumed by electric furnaces in the manufacture of rare earth magnets comprises the larger portion of the plant's total electricity usage. For that reason, we are continually striving for reductions in energy consumption and improvements in manufacturing efficiency. Even though production volume is increasing every year, we are working to reduce energy consumption per unit of manufacturing output.

The Takefu Plant has implemented the Safety Training Observation Program (STOP) developed by E.I. du Pont de Nemours and Company to enhance workplace safety and reduce accidents involving products or facilities. This program takes a "coaching" approach, in which supervisors discuss hazards found during their inspections directly with the workers on the scene. This encourages supervisors and managers to think about safety on the workplace level, enhancing safety awareness, and making supervisors more effective.



A FACTORY WITH DEEP ROOTS IN THE REGION

The Takefu Plant differs from the usual chemical plant in that it uses large volumes of liquids and electricity. Some of its manufacturing processes use acidic or alkaline chemicals and organic solvents and other chemical substances, but the volume is limited. Manufacturing processes center on the production of rare earth related, high-purity, refined-metal powders. We produce rare earths by applying our proprietary separation and purification technology to materials obtained from ore, and this is why we call it “the spice of innovative technology.” From these products emerge a series of new industrial materials.

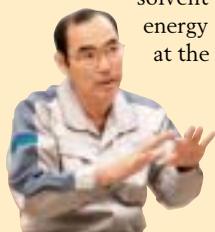
The strongest magnets are made from rare earths. In Japan, technical schools such as Fukui Technical High School sponsor contests for ideas for new applications for these magnets, and the Magnetic Materials Research Center is now developing a production prototype of one of the best of these ideas.

In addition to these activities, we maintain a lively interaction with local residents through various programs aimed at preserving water quality in nearby rivers. This also deepens our connection with the region.

We asked Mr. Ito, General Manager of Manufacturing Department 1, and Mr. Niwamoto, General Manager of Manufacturing Department 2, about the daily environmental protection activities of the manufacturing departments.

Manufacturing Department 1 primarily produces rare earths for use in magnets, including neodymium (Nd) and samarium (Sm), as well as middle-heavy and heavy rare earths for use in televisions and lamps, including yttrium (Y), europium (Eu), and terbium (Tb). We are protecting the environment through the reuse of the acids used in refining these elements, and our reuse of the waste materials of industrial processes is now in excess of 98%.

In 1987 we developed and implemented an original central control system employing a process control computer, and constructed a state of the art plant. This plant still boasts Japan’s largest and most advanced solvent extraction facilities. As solvent extraction does not require a great deal of electricity or heat, our plant is energy efficient. We have also placed a foam firefighting system, which utilizes halon, at the plant.



In recent years, applications for our products in fine ceramics and oxide particles for condensers have been in the limelight, however, with the increasing diversification of applications in advanced industrial fields, we are ensuring that we can provide a stable supply of materials by expanding our manufacturing facilities, improving processes, and working for further energy savings.



Foam firefighting system

Environmental protection activities in Manufacturing Department 2 include the efficient operation of the department’s electric furnaces, which consume large amounts of electricity. Measures taken include conversion to furnaces that reduce energy consumption by preventing radiant heat loss, and working to reduce energy consumption per product output unit. This is closely related to the progress of automation, which also restrains fluctuations in costs and quality. The Takefu plant is the world’s largest industrial-based producer of rare earth magnets that exhibit the world’s highest magnetic properties.

We have also been able to make significant improvements in safety management. Until seven or eight years ago, we had several workplace accidents with minor injuries every year, but for the past two or three years we haven’t had a single accident. In recent years, we have implemented thorough training programs that include simulation of response to natural disasters, such as earthquakes. This training is often conducted jointly with other sections.



ENVIRONMENTAL MANAGEMENT AT THE KASHIMA PLANT

The Kashima Plant is located in the East Industrial Complex, facing the port of Kashima, which is the core of the Kashima Coastal Industrial Zone. Employing cutting-edge technologies and facilities, the plant produces polyvinyl chloride resin, which has a large number of general purpose and specialized applications, and manufactures optical fiber preforms based on high-purity synthetic quartz. Shin-Etsu independently developed a large-scale polymerization reactor using non-scale technology. This reactor is distinguished for its fully automated computer-controlled production allowing an annual polyvinyl chloride resin production volume of 550,000 tons, one of the largest of any company in Japan.

THE KASHIMA PLANT

Location : 1, Towada, Kamisu-machi, Kashima-gun, Ibaraki
 Established : August 1970
 Site area : Approximately 410,000 m²
 Primary products : Polyvinyl chloride resin, Preforms for optical fiber,
 Flexible copper-clad laminate



Kashima Plant

THE KASHIMA PLANT ACTIVELY PURSUES ACCIDENT PREVENTION AND RESPONSE, AND ENVIRONMENTAL PROTECTION AS A RESPONSIBLE MEMBER OF THE COMPLEX.

The Kashima Plant pursues independent activities based on the ISO 14001 standard, and cooperates with the other firms in the Kashima East Industrial Complex in related information exchange, joint research, and joint training programs.

In 2002, the three members of the Special Accident and Disaster Response Association (Ibaraki Prefecture, the Kashima East Complex Security Association, and the Kashima Coastal Petroleum Complex) held comprehensive accident response training. In preparation for emergency situations, participants trained for the transmission of graphic images of accident sites to prefectural agencies. We also participated in the Japan Chemical Industry Association's Responsible Care Promotion. In February 2003, at the third meeting of the Kashima Area Responsible Care Conference, we gave a presentation on the Kashima Complex's accident response organization, centered on the comprehensive accident response training mentioned above.

We asked Mr. Noguki, General Manager of the Environmental Control & Safety Department, about the special characteristics of Kashima Plant's environmental protection activities.



Waste emission treatment facility

The Kashima Plant bases its environmental programs on the ISO 14001 standard, and Shin-Etsu Group member Shin-Etsu Engineering Co., Ltd. has incorporated environmental concerns throughout the entire plant's design. Main environmental protection activities include reducing emissions of regulated chemical substances, conserving electricity, reducing waste generation, and recycling.

Specific accomplishments include the early attainment, in 2001, of goals for reductions in polyvinyl chloride monomer emissions set by the Vinyl Environmental Council (VEC) for the end of fiscal 2002. We are now striving to reduce our polyvinyl chloride monomer emissions to one-half the level set by the VEC self-regulation standard.

Manufacturing Department 2, which began producing synthetic quartz in 2001, passed its supplementary ISO 14001 inspection in 2002, and has established various environmental programs with goals of reducing electricity consumption and waste generation, and increasing recycling.

We also take environmental and safety concerns into account in our distribution activities, unloading imported materials directly at the plant's berth and increasing the use of a modal shift integrated transport system that links trucks and railways for long-distance shipping. This latter initiative supports the transport of polyvinyl chloride resin in containers. The modal shift system also contributes to reductions in energy consumption and CO₂ emissions.



Berth and firefighting facilities



We asked Mr. Okuno, General Manager of Production Department 1, Mr. Koide, General Manager of Production Department 2, and Mr. Narahashi, Senior Manager of Kashima Vinyl Chloride Monomer Environmental Control & Safety Department, about the daily environmental protection activities of the Kashima Plant's manufacturing departments.

One focus of environmental protection activities in Production Department 1 is the prevention of spills while handling materials. This has been a priority since the plant was established, and is why our efforts for a closed system proceeded comparatively quickly. The zero emissions concept is at present enjoying a great deal of attention worldwide, and, as indicated by the Kashima Plant's early compliance



with VEC standards, we are energetically pursuing both environmental and safety programs. The Japanese manufacturing industries have recently experienced a number of accidents. A major issue at chemical plants is preventing or controlling chemical reactions following an accident or spill. The plant will continue striving to reduce its environmental impact through raising the level of employee training and enhancing its preparation for the unexpected.



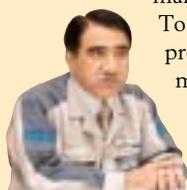
Foam firefighting facility

Environmental activities in Production Department 2 center on improved handling of hydrogen chloride gas created during production of optical fiber preforms, and developing applications for silica powder by-products. New applications for silica powder have brought our recycling rate close to 100%. At present, we are working on ways to reduce the energy consumption of our electric furnaces, and to reduce energy consumption per unit of manufacturing output. We will continue working for further increases in operational efficiency.



Kashima Vinyl Chloride Monomer Co., Ltd. has worked to reduce environmental impact and conserve energy since its first days of operation, energetically striving to reduce its emissions of atmospheric pollutants, closing its facilities against emissions to the atmosphere, and improving thermal oxidation treatment of exhaust gases.

The large-scale thermal oxidation equipment that came on line in February 2001 allows us to purge exhaust gases of all pollutants prior to discharge to the atmosphere. In response to strengthened water-quality regulations, including those governing the discharge of ethylene dichloride (EDC), we have overhauled our wastewater management system, and now have a complete system in place that treats even rainwater. As a result, this plant ranks with the best in the industry in terms of the volume of its emissions. We are establishing processes to reuse all by-products of manufacturing processes, and pursue energetic Responsible Care (RC) promotion.



To further raise the level of our environmental and safety programs, we established project teams in each of the three areas of safety management, facilities management, and operations management. In April 2003, we received government and public authority certification allowing us to inspect our high-pressure gas facilities in-house. We have also received certification to use our boiler and first-grade pressure vessel for two continuous years.

Because the Shin-Etsu Group is the largest manufacturer of polyvinyl chloride in the world, it is often thought of as a manufacturer of petrochemicals. On the contrary, the primary raw material in products such as silicone (silicone resin) and synthetic quartz, which is used to make optical fibers, is silicon, a material that is abundantly present in nature. In addition, the composition ratios of salt and petroleum in chlorinated vinyl are 57% and 43%, respectively, indicating that the petroleum content is remarkably low compared with other plastic products.

The following table identifies representative products, from among the numerous products and materials produced by the Shin-Etsu Group, that contribute to reducing environmental burden.

There are many types of ecological functions a product can provide, such as resource and energy efficiency, effective use of easily recyclable materials, control of harmful emissions, conservation of petroleum resources, or integration with the ecosystem. By providing these products, Shin-Etsu seeks to reduce the overall burden on the environment, and to contribute to the conservation of petroleum and other natural resources.

Products	Usage	Ecological function	Point of products
Polyvinyl chloride 	Polyvinyl chloride materials in general (production process)	Energy saving	The material comprises salt (57%) and petroleum (43%); the ratio of petroleum is lower in comparison with other plastic products, with minimal adverse environmental effects in the life cycle assessment (LCA)* in comparison with other materials.
	Products such as chlorinated vinyl sash	Energy saving	Compared with other materials, is better able to insulate against heat; accordingly, enables the saving of fuel for air conditioners and electric power.
	Products such as chlorinated tube	Excellent durability	Compared with other materials, is more durable in general.
Silicone Typical form of silicone	For plastic (modified resin)	Reduces adverse effects on the environment	By not using environmentally hazardous substances, improves safety and is superior to recyclability.
	For tires (modified rubber)	Energy saving, improvement in fuel charge countermeasures, dust	By improving fuel charges, enables a reduction in the amount of CO ₂ , nitrogen oxides (NO _x), and sulfur oxides (SO _x), etc., that are generated, and consequently helps prevent global warming and environmental pollution.
Form of silicone oil 	Water-repellent agent for construction	Reduces adverse effects on the environment, harmonization with ecosystem	By not using environmentally hazardous substances, improves safety.
	Lubrication oil	Energy saving	Superior to lubrication in low temperature.
Form of silicone resin 	For addition to paints	Resource saving	Superior to corrosion resistance and weather resistance.
	LIMS (for liquid silicone, injection molding system)	Energy saving	Energy saving in the process of molding and increase in productivity.
Form of silicone rubber 	For heat radiation and insulation	Energy saving and resource saving	Efficient in energy saving and reduces the quantity of CO ₂ , resulting in the minimal use of products.
	For hardening of UV (ultraviolet rays)	Energy saving, non-solvent agent	Saves more energy compared with heat curing type products.
	Non-solvent type products (for release paper, etc.)	Reduces adverse environmental effects, non-solvent agent	Use of both a solvent agent and dilution solvent are unnecessary, and consequently there is a reduction in capacity and saving of energy at the stage of transportation. Organic solvent is not used, thus the product is safe for humans. Enables a reduction of adverse effects on the environment involving discharge into the atmosphere.

*Life Cycle Assessment (LCA):
Method to evaluate the degree of environmental influence in the process of production through collection and reuse

Products	Usage	Ecological function	Point of products
Synthetic pheromones 	Mating disruptant	Harmonization with ecosystem, ecological agrochemicals	This product is a synthetic natural substance with minimal toxicity that decomposes into water and carbon dioxide in the natural environment, making it more environmentally friendly compared with earlier agrochemicals.
Cellulose derivatives 	Admixture for underwater concrete	Water pollution control	Increases the viscosity of concrete, preventing water pollution during construction in the water.
Rare earth magnets 	Compressor motors for air conditioners	Resource saving, compact in size, energy saving	Reduces annual electric power consumption. Reduces the quantity of lead.
	Wind-power motors	New energy	Compared with thermal power generation, enables a reduction of the amount of CO ₂ , nitrogen oxides (NO _x), sulfur oxides (SO _x), etc., that are generated, and consequently helps prevent global warming and environmental pollution.
	Electric vehicle motors	Clean energy	Compared with gasoline, enables a reduction of the amount of CO ₂ , nitrogen oxides (NO _x), sulfur oxides (SO _x), etc., that are generated, and consequently helps prevent global warming and environmental pollution.
Epoxy-molding compound 	Resin encapsulating material for semiconductors	Controls chemical substance generation	By introducing a special silicone hard-combustive system, achieves halogen-free and antimony-free operation.
Hot melt adhesives 	Magazine recycling	Resource conservation	It is now possible to achieve 100% recycling, including those parts of magazines that could not previously be recycled, such as those containing glue.
Polypropylene (PP) Film 	Microwave oven condensers	Conserves resources	An alternative to conventional condensers using paper, helping to conserve forest resources.

Eco-Friendly Products ①
POLYVINYL CHLORIDE



POLYVINYL CHLORIDE SASH

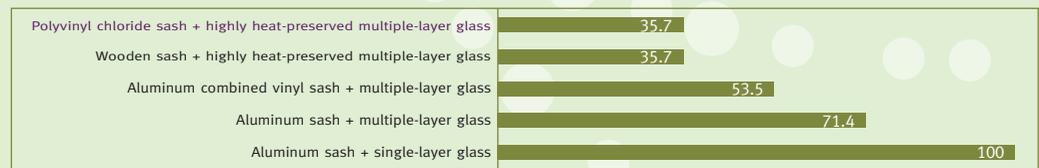
Since polyvinyl chloride is durable against corrosion and climate, it is used widely in the field of architecture. Above all, vinyl sash is remarkable because of its ability to keep a room warm, preserve heat, and reduce noise.

ECOLOGICAL PERFORMANCE

This material offers superior heat retention, more than 1,000 times greater than aluminum. When used as a window frame, it can reduce to around half the energy consumption required for heating and cooling compared with our previous products. Consequently, it can save energy equivalent to 436 liters of lamp oil (per household annually). It is commonly used overseas as a material for window frames, especially in environmentally advanced Germany, where the ratio of its usage is over 50%. Use of this material is also growing in Japan, mainly in cold weather regions.

Further information in Japanese on polyvinyl chloride sashes can be found on the Web site of the Polyvinyl Chloride Sash Promotion Committee (www.Jmado.jp)

Comparison of the Degree of Heat Temperature Decrease (Aluminum Sash + Single-Layer Glass = 100)



Source: Japan Building Material Industry Association, "Promotion of Energy Saving Building Materials Diffusion Center."

Eco-Friendly Products ②
SILICONE



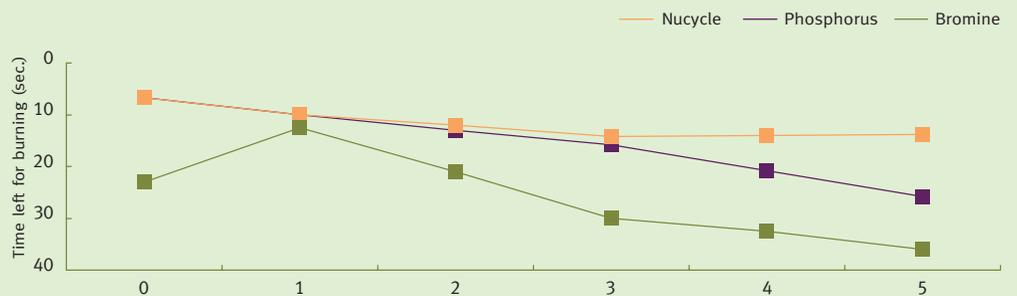
SILICONE FOR ECO-PLASTIC

Silicone applications for plastics modification are being developed in a variety of fields. A representative example is Nucycle, a product jointly developed and manufactured by NEC Corp. and Sumitomo Dow Ltd. This eco-plastic, containing an additive of silicone flame retardant jointly developed by NEC and Shin-Etsu, is used in the housing of liquid crystal displays and the bodies of personal computers.

ECOLOGICAL PERFORMANCE

Nucycle, containing a new type of silicone flame retardant agent, provides even greater flame retardancy than plastics incorporating toxic substances such as halogen (bromine) and phosphorus, and is significantly more shock resistant. Moreover, because Nucycle retains its flame retardant properties after recycling, it can be reused as a material in electronic devices, such as the body of a PC, greatly contributing to the realization of a recycling-oriented society.

Flame Retardance of Polycarbonate Added to Various Flame Retardant Agents (Tested by UL, Thickness 3.2mm)



Source: NEC Technical Report, Vol. 53, No. 3/2000 Cooperation: NEC Corp.



CONTROL OF DESTRUCTIVE INSECTS

Synthetic pheromones are a revolutionary alternative to conventional insecticides as a means of controlling destructive insects. Synthetic pheromones once placed in apple, peach, pear, or plum orchards, effectively reduce the numbers of destructive insects by inhibiting their mating behavior throughout the season.

ECOLOGICAL PERFORMANCE

Synthetic pheromones are chemical compounds that chemically resemble the natural pheromones that regulate insect sexual behavior. Only very small amounts are required, and they are far less toxic and much more selective than insecticides or agrochemicals. They also have less of an effect on predators or other beneficial insects. Pheromones biodegrade rapidly, and the by-products are limited to CO₂ and water. Pheromones do not, therefore, cause environmental pollution.



Magnetic compressor

AIR-CONDITIONING COMPRESSOR MOTORS

Rare earth magnets are high-performance, permanent magnets made from neodymium, samarium, or other rare earth elements. They possess a strong magnetic power, and are commonly used in hard disk drives, stereo headphones, and motors for factory automation (FA) and office automation (OA) equipment. They are also found in air-conditioning compressors, for which a highly efficient motor is essential, and are highly regarded as a part of a new type of energy-saving motor.

ECOLOGICAL PERFORMANCE

The size and weight of air-conditioning compressor motors can be reduced with the use of rare earth magnets. Such motors are only 85% the capacity and weight of conventional motors, and use 40% less copper wire.

The coefficient of performance (COP) was improved approximately 5% to 10%, and the power consumption greatly reduced, which helps save energy, reduce CO₂ emissions, and prevent global warming.

(Rare earth) ND-type magnetic rotor (motor thickness-50%)
Copper wire use-40%

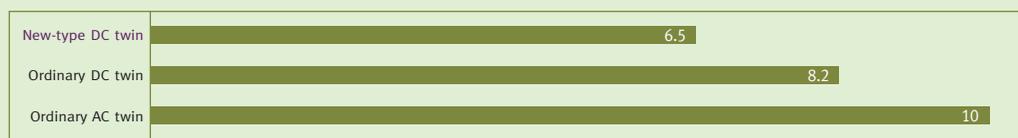


New-type DC motor (CWM)

Ordinary DC motor

Ordinary AC motor

Weight Comparison of Compressors (kg)



Cooperation: Sanyo Denki Co., Ltd./Sanyo Denki Kucho Co., Ltd.

Mr. Tsuji, General Manager Magnet Production Control Department of the Takefu Plant, discusses the energy-saving potential of products using rare earth magnets.



The Takefu Plant produces several types of rare earth magnet. Among these, neodymium magnets are widely used because of their magnetic strength and low cost. Compared to common ferrite magnets, neodymium magnets provide the same magnetic power with less than 10% of the volume, making them the strongest magnets in the world. Motors are by far the most common application for magnets. By using neodymium magnets, efficiency can be greatly improved, and energy savings realized. Statistically, approximately half of the energy consumed in Japan is from motors, so it is easy to understand the attention given to the energy-saving properties of neodymium magnets. I believe that low-energy applications for these magnets in energy conserving products, such as electric cars, are going to increase in the future.

The Shin-Etsu Group's environmental activities are built around the participation in environmental management by each and every employee. In pursuit of environmental protection programs suited to our production sites, in July 1996, our Gunma Complex attained ISO 14001 certification, the international standard for environmental management. All our domestic plants completed certification in 2000, and we are rapidly moving toward completion of the certification of our overseas manufacturing bases.

All our plants are constantly engaged in improving activities in an effort to protect the environment and reduce the environmental burden of their operations. (For further information on the ISO 14001 status of Shin-Etsu and our principal subsidiaries, see page 25.)

INTERNAL AUDIT AND INSPECTION SYSTEMS

Shin-Etsu has adopted audit and inspection systems to ensure the Group's activities conform to the highest standards of protection and safety.

ENVIRONMENTAL CONTROL AND SAFETY AUDITS

Audit teams are committees composed of technical and safety experts, led by the director in charge of environmental control and safety. The teams conduct on-site inspections of environmental protection programs, results achieved, and problems encountered, and check records for accuracy and completeness. Reports of these inspections are circulated to all executives and to the inspected plants, and problems identified are tracked until shown to be resolved upon a subsequent inspection.

SAFETY INSPECTION COMMITTEE

Safety inspection committees are composed of plant managers and key personnel. These committees inspect the installation and safety performance of new facilities utilizing hazard and operability study (HAZOP*) and other studies to identify areas for improvement in an effort to further raise environmental protection and safety.

LABOR AND MANAGEMENT SAFETY PATROLS

Key labor and management personnel periodically carry out patrols to check safety conditions at existing plant facilities.

Self-Monitoring and Audit Programs

(Number of cases)

Fiscal year	'95	'96	'97	'98	'99	'00	'01	'02
Environmental control & safety audits	8	8	11	10	12	12	8	8
Safety inspection committees	47	34	53	45	48	50	50	40
Labor/management safety patrols	30	30	30	30	30	30	23	27
Number of HAZOP studies	45	38	41	43	38	35	27	66

* Hazard and Operability Study (HAZOP)

HAZOP's are designed to allow improvement in work procedures and facilities by anticipating potential malfunctions in manufacturing facilities and the resultant environmental pollution brought on by changes to operating conditions. A HAZOP is conducted when a new facility is in the design stage, and is done by the designers and facility managers to ensure that a high degree of safety is designed into the facility. Existing facilities are also subject to HAZOPs, in which their operators participate, and this is reflected in improvements to operating procedures and facilities.

ENVIRONMENTAL ACCOUNTING

Shin-Etsu is constantly working to improve manufacturing facilities at each of our plants to reduce the environmental burden of their operations and ensure environmental protection and safety.

We have introduced environmental accounting, taking stock of those expenses incurred and investments made in an effort to reduce the environmental burden from air and water pollution, noise and vibration, and waste disposal, measures to conserve energy, and initiatives to prevent global warming.

We have invested a cumulative total of approximately ¥17.6 billion in environment-related activities over the past 10 years. Major investments during this period are presented as follows:

- Installed a waste incinerator at the Naoetsu Plant
- Upgraded wastewater treatment facilities at the Naoetsu and Takefu plants
- Upgraded the Nagayatsu industrial waste disposal site at the Gunma Complex
- Upgraded and rationalized PVC facilities, including environmental countermeasures, at the Kashima Plant
- Installed other facilities and equipment to reduce gaseous emissions, energy consumption, and introduced cogeneration systems

We have also compiled details of investments and expenses related to environmental protection for fiscal 2002 in accordance with environmental accounting guidelines stipulated by the Ministry of the Environment.

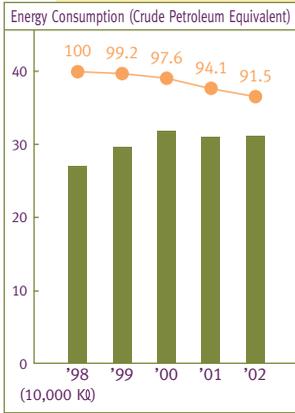


Waste disposal facility

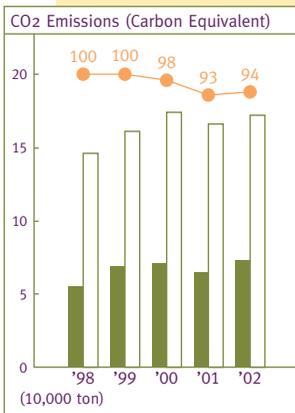
Environmental Costs

(Millions of yen)

Category	Details	Investment	Expenditure
Business area costs			
Pollution prevention cost	Air, water, and noise and other types of pollution prevention measures	252	2,544
Global environment conservation cost	Energy conservation and global warming prevention measures	118	389
Resource circulation cost	Waste prevention, recycling, and other measures	200	1,272
Upstream and downstream costs	Green purchasing and container and packaging measures	0	7
Administration cost	Environmental management, monitoring environmental impacts, and education measures	0	336
Research and development cost	Environmentally conscious product and process research and development	0	312
Social activity cost	Donations and contributions to environment protection	5	250
Environmental remediation cost	Assessment, handling, and other costs related to environmental degradation	0	76
Total		575	5,186



■ Energy consumption
● Per sales unit (fiscal 1998=100)



■ Excluding that purchased from power companies
□ Including that purchased from power companies
● Per sales unit (fiscal 1998=100)

ENVIRONMENTAL PROTECTION

PROMOTING ENERGY CONSERVATION

Shin-Etsu consumes both thermal energy and electrical energy in synthesis, purification, and various other manufacturing processes. To use the world's resources wisely, we have adopted various methods and diversified technologies to more efficiently use and conserve energy. These measures include:

- Continuously promoting the introduction of cogeneration systems
- Increasing the efficiency of heating and cooling method processes
- Collecting synthetic response heat and recycling it as steam
- Reducing electrical power consumption by adopting a highly effective refrigerator

We saved 57 kilo barrels (9,000 kiloliters) of crude oil compared with the previous fiscal year as a result of the aforementioned measures. Total energy consumption in fiscal 2002, was equivalent to 1,962 kilo barrels (312,000 kiloliters) of crude oil.

PREVENTING GLOBAL WARMING

Shin-Etsu is working to minimize emissions of CO₂, methane, CFCs, and other "greenhouse gases" that cause global warming. In 1995, we completely ceased all use of those CFCs that can have a harmful effect on the ozone layer.

We are strongly promoting the use of cogeneration systems, more efficient energy utilization and at the same time, the reduction of CO₂ emissions and other greenhouse gases. In fiscal 2002, we reduced our CO₂ emissions to the approximate equivalent of 173,000 tons of carbon, a reduction of 6% over the past five years.

PREVENTING AIR POLLUTION

Shin-Etsu is working to reduce the emission of pollutants through equipment upgrades and scheduled inspections, and to reduce the environmental impact of our operations through the improvement of facilities and switching to low-polluting fuels.

Our boilers primarily burn fuel oil, which gives off CO₂, small amounts of NO_x and SO_x, and soot. In addition, our plants incinerate the by-products, waste solvents, sludge, and rubbish that is generated from manufacturing activities. The incinerator stack gases also contain CO₂, small amounts of NO_x and SO_x, soot, and extremely small quantities of dioxins.

We regularly monitor and analyze these stack gases to ensure compliance with statutes and regulations governing pollutant concentrations. In addition, the switch to high-grade fuels is reducing the quantity of NO_x and SO_x, while improvements to combustion efficiency and augmentation of pollution control equipment are bringing reductions in soot and dioxin emissions.

Production increases at Shin-Etsu resulted in a temporary increase in gaseous emissions. Accordingly, we are working diligently to gradually reduce the emission of pollutants. In fiscal 2002, the amount of soot was held at 14 tons, NO_x to 780 tons, and SO_x to 1,470 tons.

Boiler Exhaust Analysis Results

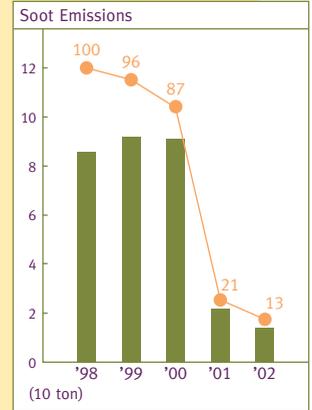
Fiscal year	Government requirement	Prefectural requirement	'90	'95	'99	'00	'01	'02
Soot (g/Nm ³)	0.1~0.25		<0.02	<0.02	<0.02	<0.002~0.21	<0.01	<0.045
NO _x (ppm)	150~230	150~230	<200	<150	<150	<60~190	<190	<220
SO _x	K17.5	K17.5	<15	<15	<15	<0.6~12.4	<9.2	<10

(The standard for boiler NO_x varies according to the type of boiler. The range of standard values for the equipment concerned is shown here.)

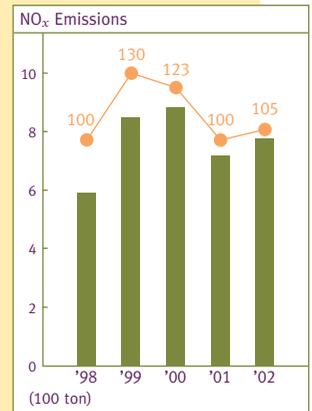
Incinerator Exhaust Analysis Results (Gunma Complex)

Fiscal year	Government requirement	Prefectural requirement	'90	'95	'99	'00	'01	'02
Soot (g/Nm ³)	0.15	0.15	<0.2	<0.2	<0.1	<0.1	<0.01	<0.01
NO _x (ppm)	300	230	<100	<100	<100	<100	<100	<100
SO _x	K17.5	K17.5	<2	<2	<1	<1	<1	<0.06
Hydrogen chloride (mg/Nm ³)	700	700	<300	<300	<300	<200	<51	<74
Dioxins (ng/Nm ³)	5 (1998 / 12-2002 / 11)				<0.01	<0.01	<0.01	<0.01

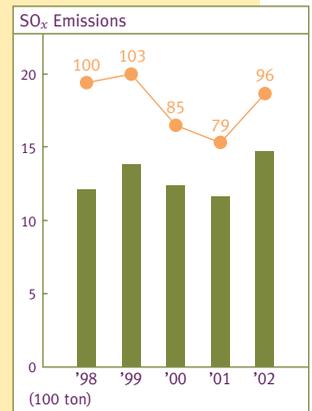
(The soot levels stipulated in government and prefectural regulations had been 0.5 until March 1999 but were changed to 0.15 beginning in April 2000.)



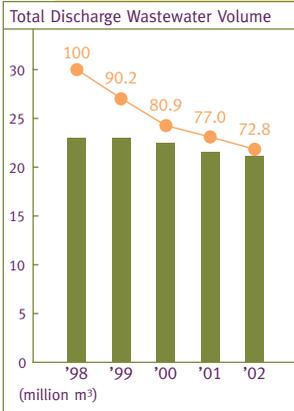
■ Soot emissions
● Per sales unit (fiscal 1998=100)



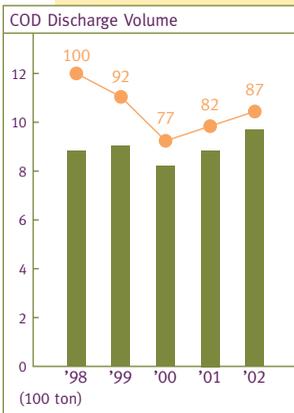
■ NO_x emissions
● Per sales unit (fiscal 1998=100)



■ SO_x emissions
● Per sales unit (fiscal 1998=100)



■ Total discharge wastewater volume
● Per sales unit (fiscal 1998=100)



■ COD discharge volume
● Per sales unit (fiscal 1998=100)

PREVENTING WATER POLLUTION

Shin-Etsu practices the efficient disposal of wastewater and monitors the pH of final effluent with the aim of stabilizing wastewater quality and to protect the riverine environment.

Most of the water used by our plants is process water used in the manufacture of our products and in cleaning, or in cooling water for machinery. No water is discharged until it is confirmed to be within the standards set forth in the Water Pollution Control Law and other applicable regulations.

In fiscal 2002, we reduced total discharge volume through recycling efforts and other measures to conserve water. Moreover, despite fluctuation from one year to the next, the upgrade of wastewater disposal facilities is contributing to an overall decline in chemical oxygen demand (COD) discharge volume.

*Chemical Oxygen Demand (COD):

This is the amount of oxygen required to degrade the organic compounds of wastewater. A bigger COD value means more-polluted wastewater.



Wastewater treatment facility

Wastewater Analysis Results	Government requirement	Prefectural requirement	'90	'95	'99	'00	'01	'02	Detection limit
pH*	5.8~8.6	5.8~8.6	6.7~7.6	6.7~7.8	6.2~7.7	6.7~8.2	6.3~7.8	6.1~8.1	
BOD*(ppm)	160	25~70	5~14	2.6~22	1.5~34	1.0~37	1.8~32	1.0~35.6	0.5
SS* (ppm)	200	20~600	7.7~13	0~10	4.0~20	2.0~43	5.0~24	1.0~138	1

(Prefectural requirements vary according to the prefecture in which each plant is located.)

*Potenz Hydrogen (pH):

This is a unit of hydrogen ion exponent (log[H+]) that indicates whether a solution is acidic (less than pH 7), neutral (pH 7) or alkaline (more than pH 7).

*Biochemical Oxygen Demand (BOD):

This indicates the amount of oxygen required for water-borne micro-organisms to break down contaminants in water. This value is a measure of the degree of water pollution.

*Suspended Solids (SS):

These are organic and mineral particles that are suspended in water. They are a major cause of turbidity, and have a significant impact on aquatic life.

REDUCING WASTE (PROMOTING THE 3R PRINCIPLE—RECYCLING, REDUCING AND REUSING)

Each of Shin-Etsu's plants discharges industrial waste in the form of secondary material by-products and solvents such as organic and inorganic sludge, and oil and acid waste produced from non-reactive materials and reactive chemicals.

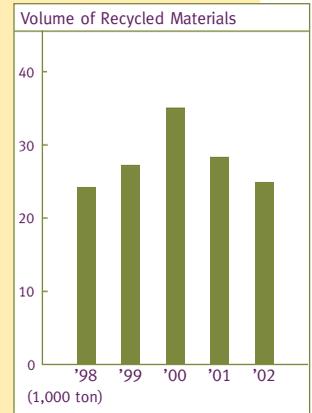
We are working to both reduce and reuse raw materials through the use of more efficient reactive materials and improvements in extraction rates in connection with the waste produced through our manufacturing activities.

In addition, we recycle industrial waste into fuels, reprocessed secondary materials for use by both this and other companies.

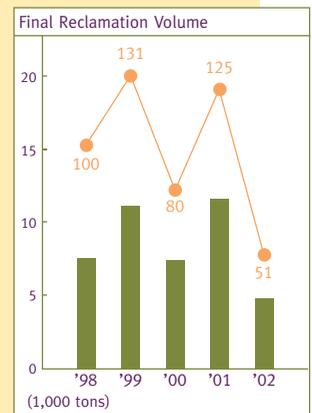
In fiscal 2002, we worked actively to reduce waste toward our environmental management targets. As a result, we were successful in significantly reducing the volume of final reclamation waste to 4,900 tons and in raising the level of recycled materials to 25,000 tons, reflecting efforts to collect and reuse commercial metals, commence cement stabilization of inorganic waste, recycle waste acid, and promote thermal recycling of plastic waste.



Storage area for separated waste



Volume of recycled materials



Final reclamation volume
Per sales unit (fiscal 1998=100)

PROPER HANDLING OF CHEMICALS

Many chemical substances are harmful to the environment and to health and are therefore subject to a variety of laws and regulations. Shin-Etsu uses numerous chemicals in our manufacturing processes and accordingly adheres strictly to regulatory requirements. We have always exercised close control over the chemicals we use and have a variety of safeguards in place to prevent accidents or discharge to the environment.

We report on manufacturing volumes of new specific chemical substances and small amounts of new specific chemical substances in accordance with the Industrial Safety and Health Law and the Law Concerning the Examination and Regulation of Manufacture', etc. of Chemical Substances. In addition, we have also installed automatic clarifier equipment and at the same time filters in the secondary water discharge lines to reduce dioxin concentrations in line with the Law Concerning Special Measures against Dioxins. As prescribed under the PRTR Law, our Naoetsu and Kashima plants are cooperating with the national and prefectural governments' pilot program, and implementing systems to report accurately and at the same time to reduce the release of specific chemical substances through closed system manufacturing facilities and installing incineration equipment for gaseous emissions.

To ensure safety and environmental protection through proper handling of chemical substances, we have implemented a material safety data sheet (MSDS) system. We prepare an MSDS for each product, and, to aid safety and environmental protection, provide them to employees and users. We receive MSDSs from suppliers of raw materials, and use them in practice for proper handling by employees.

1. New Specific Chemical Substances

The Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances and the Labor Safety and Sanitation Law create reporting duties with respect to new specific chemical substances.

2. Small Amount of New Specific Chemical Substances

These are new specific chemical substances that are subject to the reporting requirements of the two laws mentioned above, but which are produced or handled in small amounts.

3. The PRTR Law is the Law Concerning Reporting, etc. of Release to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management.

Change in Activities Relating to Control of Chemical Substances

(Number of cases)

Fiscal year	'95	'96	'97	'98	'99	'00	'01	'02	
MSDS prepared	4,400	4,900	5,800	6,000	6,900	7,000	8,000	8,282	
Yellow cards issued	10	22	90	100	100	120	178	118	
New Specific Chemical Substances	20	31	51	53	60	64	62	66	Report to industry group on the status of self-management
New Specific Chemical Substances	18	17	8	11	16	5	23	11	Total number of cases regarding the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances, and the Labor Safety and Sanitation Law
Small Amount of New Specific Chemical Substances	566	578	613	599	562	535	576	588	Total number of cases regarding the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances, and the Labor Safety and Sanitation Law

■ OTHER ENVIRONMENTAL PROTECTION ACTIVITIES

REDUCTION OF VIBRATION AND NOISE

Shin-Etsu conduct scheduled measurements of vibration and noise at specified points around the boundaries of our plants to ensure that we are in compliance with standards. We also analyze the data gathered to assist in our planning for the installation of noise abatement equipment and the upgrade of machinery that create vibrations.

PARTICIPATION IN INDUSTRY-LEVEL ENVIRONMENTAL ACTIVITIES

Shin-Etsu is a member of the Japan Chemical Industry Association, Vinyl Environmental Council (VEC), the Plastic Waste Management Institute, and other groups. We participate in chemical substance management and research activities, public relations to promote a correct understanding of PVC, and efforts to improve industrial waste disposal and recycling technology.

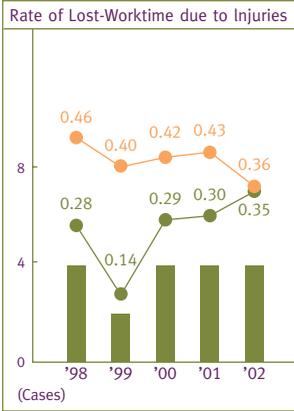
■ ENVIRONMENTAL EDUCATION

To communicate the importance of environmental protection, Shin-Etsu train all personnel in the provisions of our Environmental Charter and the environmental policies of each plant. We also provide training in the importance of recycling, the separation of waste materials, the preservation of natural environments, and the effects of destruction of the ozone layer.

Specialized training is held for personnel whose functions can have significant effects on the environment, such as emergency response personnel and wastewater management personnel. This training requires specialized knowledge, and leads to technical qualifications.

Specialized Knowledge and Technical Qualifications:

- To manage industrial waste materials
- To manage wastewater quality
- To manage exhaust gas
- To develop high-pressure (HP) gas safety technology
- To handle hazardous materials
- To handle toxic chemicals



- Number of injuries with lost days
- Rate of lost-worktime (Japan Chemical Industry Association)
- Rate of lost-worktime (Shin-Etsu)

SAFETY AND OCCUPATIONAL HEALTH

At Shin-Etsu, the preservation of the environment and the maintenance of safety are always before us, and are priorities second to none in our business operations. We believe it is our responsibility as a firm to provide a safe working environment for our employees. Our fundamental philosophy is based on respect for people, which leads to our management goal of placing “Safety and Environmental Protection First” in all our activities.

SAFETY PROGRAMS

Shin-Etsu are utilizing safety inspection committees to maintain safety within our facilities, and the HAZOP method to institute improvements to our facilities and industrial processes. Our periodic safety patrol and safety suggestion programs have also made numerous contributions to this effort. As a result, our frequency rate of time lost to injury (LTI), which refers to the number of injuries from disasters and accidents per one million working hours, is about 0.3, and this rate is better than the industry average.

OCCUPATIONAL HEALTH PROGRAMS

Shin-Etsu provides employees with regular physical examinations, and has made improvements to the working environment to prevent occupational illnesses. Mental health support is also available.

ZERO ACCIDENT PROGRAMS

From fiscal 2002 forward, Shin-Etsu’s three-year plan will incorporate “zero accident programs” to reduce accidents due to human error. In fiscal 2003, we implemented a hazard awareness program, implemented risk assessment, and programs to prevent accidents to encourage greater attention to safety on the part of each employee. Increasing sensitivity to hazards will not only prevent industrial accidents and increase operational safety, but will also prevent environmental incidents.



Facilities control center

ENVIRONMENTAL PROTECTION AND SAFETY IN THE LOGISTICS STAGE

Every facet of Shin-Etsu Group's shipping operations, from the parent company, Group shipping subsidiaries, through external contractors, is working to reduce environmental impact. These measures include shortening shipping routes, creating a new logistics system that combines truck and railway shipping, and increasing the efficiency of product delivery systems. Reducing waste in shipping operations has also reduced CO₂ emissions, contributing to energy conservation. Yellow cards* are provided to drivers of trucks transporting hazardous materials. These cards set forth proper measures to be taken in case of traffic accidents or other emergencies, contributing to the safe transport of these materials. We are also taking steps to provide container yellow cards for the transport of small quantities of hazardous materials.

Moreover, we are implementing education programs for drivers in the event they are involved in a traffic accident or emergency, installing emergency equipment in vehicles, and establishing an emergency support network.

* Yellow cards

Issued to the drivers of vehicles transporting hazardous materials, yellow cards give information on safety and the handling of hazardous materials.

EMERGENCY RESPONSE

A large-scale disaster at any one of Shin-Etsu's plants, has the potential to impact, not only on our employees, but on surrounding areas as well. Should such an accident or a large-scale earthquake occur, we have established effective emergency response procedures and conduct periodic emergency drills to ensure their efficacy.

Emergency drills are conducted at each of our plants, as well as at each department, to ensure appropriate action is taken in the event of a disaster such as fire explosion or a leak of hazardous materials. Drivers are also provided with emergency equipment in the event of an accident during transportation.

In response to recent accidents, both domestic and overseas, we have:

- Established an emergency communication system in the event of large-scale earthquake
- Conducted quantitative evaluation using simulation software to assess the damage done
- Strengthened our crisis communication capabilities through the establishment of systems to disseminate information to regional citizens
- Installed emergency equipment in all appropriate locations including a support network outside the Company's premises
- Implemented a yellow card information system and provided training in how to respond in emergency situations..



Tanker truck for integrated transport system use

>>> REGIONAL EXCHANGE

The Shin-Etsu Group believes that it has a mission to satisfy customers around the world through its business activities, but also seeks to contribute to the creation of a better society through a variety of activities involving the regions in which it operates and the residents of those regions. Following are some of our principal environmental, safety, and regional exchange activities conducted since fiscal 2002.



Gunma Complex Offers Workplace Experience for Local Junior High School Students

The Gunma Complex accepted seven students from Annaka Junior High School to take part in workplace experience to help them gain a deeper understanding of the working world.

After conducting simple chemistry experiments at the Silicone Electronics Materials Research Center, the students took a tour of the utility system at the Isobe Plant.

The chemistry experiments involved eliminating foam using a silicone antifoaming agent and testing the water-shedding quality of silicone, the results of which amazed the students.



Naoetsu Acetylene Receives Minister of Economy, Trade and Industry Prize for Safe Handling of High-Pressure Gas

Naoetsu Acetylene Co., Ltd., a manufacturing subsidiary of the Shin-Etsu Group, received the Minister of Economy, Trade and Industry Prize for excellence in a high-pressure gas manufacturing facility.

The subsidiary has been engaged in the manufacture and sale of dissolved acetylene since 1952. This prize is the highest award that can be received for safety in the handling of high-pressure gas, recognizing the results of the subsidiary's ongoing safety efforts.



Kashima Vinyl Chloride Monomer Receives the Ibaraki Prefecture High-Pressure Gas Local Disaster Preparedness Committee Chairman's Award

Kashima Vinyl Chloride Monomer Co., Ltd., a subsidiary manufacturing vinyl chloride for the Shin-Etsu Group, received the Ibaraki Prefecture High-Pressure Gas Local Disaster Preparedness Committee Chairman's Award. This award recognizes the completeness of the subsidiary's procedures, machinery, and materials necessary to handle large volumes of high-pressure gas, the high level of its safety management, the establishment of a local disaster preparedness structure, and the precautionary measures to prevent disasters taken when moving high-pressure gas in the region.

(An interview with Mr. Narahashi, General Manager of Control & Safety Department is on page 7.)



Naoetsu Plant Holds Summer School

The Naoetsu Plant held a summer school using local facilities the week of July 28th for the upper grades of elementary school. The teachers were young employees of the Naoetsu Plant, who helped students with their summer vacation homework and played together with them. This year, 43 children participated in the program, which has now continued for over 30 years. This program is extremely effective in maintaining good relations with the community.

Takefu Plant Sponsors Magnet Contest

The Takefu Plant, which manufactures several types of rare earth magnets, has sponsored a "magnet contest" held by Fukui National College of Technology. A total of 464 entries—a new record—were received from elementary schools through universities. Fifteen entries were selected for honors at the eighth annual award ceremony held at the Fukui Chamber of Commerce in December 2002, including two runner-up Idea Awards, one Special Incentive Award, and one honorable mention. More than 1,000 applications for entries have been received for the ninth contest to be held in 2003, a headache for the persons charged with selecting entries, but also a source of delight for the interest being shown in magnets.



Takefu Plant Participates in the Takefu City Fire Department Firefighting Techniques Tournament, Finishing in the Top Ranks

Three teams from the Takefu Plant participated in the 50th Takefu City Fire Department Firefighting Techniques Tournament, taking third in the pump truck division, and third and fifth places in the small pump division. The best persons from each company were chosen to participate in this memorial 50th year event, competing for the most proper firefighting techniques and in time trials. Dissatisfied with their performance, the teams are already training hard for next year to build a team that can move with improved efficiency and quickly.

Shin-Etsu Booth at GSC Tokyo 2003 Features Environmentally Friendly Products and Technology

The Shin-Etsu Group participated at the First International Conference on Green & Sustainable Chemistry (GSC TOKYO 2003) held at the Waseda University International Conference Center in March 2003. Panels and pamphlets offered introductions to the Company's line of eco-products, and products such as synthetic pheromones, cellulose derivatives, and environmentally friendly hot-melt adhesive were on display.

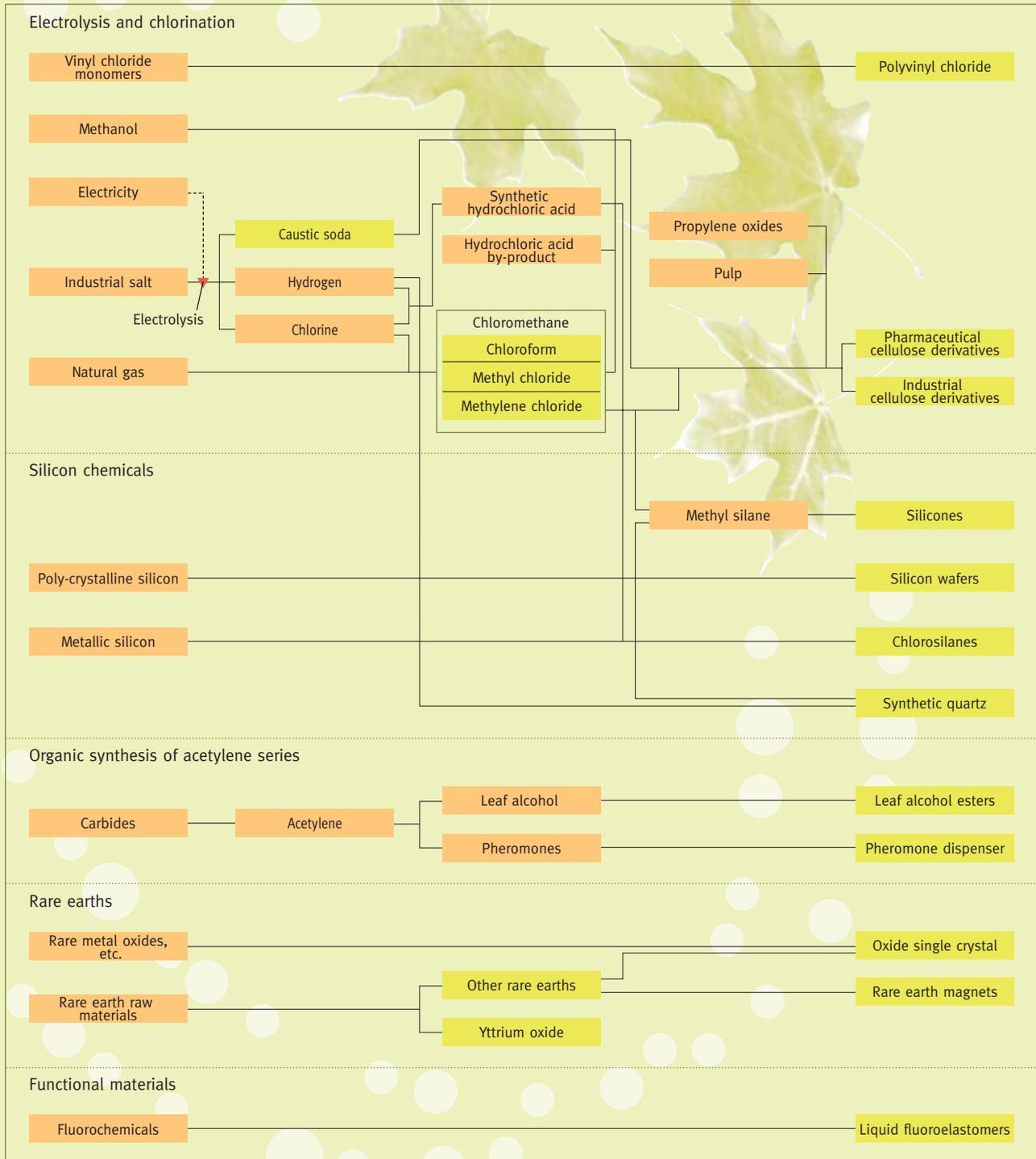


Gunma Complex Conducts Beautification Campaign

The Gunma Complex, along with affiliated and other participating companies, held a beautification campaign for the area surrounding the complex, picking up cans and bottles from roadsides along the plant. Private citizens, businesses, and governments cooperated in this beautification effort, which we intend to continue actively in the future.

>>> PRODUCTION DIAGRAM FOR MAJOR PRODUCTS

The Shin-Etsu Group aims to expand beyond its role as a chemical manufacturer to become a producer of various high-tech materials as well. At present, it produces polyvinyl chloride, silicones, semiconductor silicon, synthetic quartz, methyl cellulose derivatives, rare earth magnets, and various other products.



>>> HISTORY OF ENVIRONMENTAL ACTIVITIES

Shin-Etsu has engaged in quality control ever since 1950, quite an early period for such activities. In 1953, we established work manuals and work standards and were awarded the Deming Prize. We received praise from Dr. Deming himself, who stated that in terms of the level of statistical quality control, we ranked “the highest in the world.”

In 1970, we established the Environmental Control & Safety Department. Since then, we have been actively engaged in environmental management. In 1996, our Gunma Complex obtained certification under ISO 14001, the first achievement of this kind for a major company in the Japanese chemical sector. Currently, each production base of our main subsidiaries and affiliated companies, such as Shin-Etsu Chemical and Shin-Etsu Handotai, has obtained certification under ISO 14001, and we are working to ensure that all our plants, including those overseas, obtain such certification.

HISTORY OF ENVIRONMENTAL MEASURES TAKEN BY SHIN-ETSU

April	1953	Work manuals and work standards formulated.
November	1953	Third Deming Prize received.
September	1955	Education and training committees established.
March	1961	R&D Committee and Chemical Industry Council established.
June	1961	Safety Council established.
October	1961	First safety audit carried out.
November	1966	Safety Health and Hygiene Committee established.
November	1970	Environmental Control & Safety Department established.
October	1971	Wastewater treatment facility completed at Isobe Plant.
March	1972	Large-scale hydrochloric acid recovery facility (by-product incinerator) completed at Kashima Vinyl Monomer plant.
November	1973	Fukui Environment Analysis Center established. Companywide emergency council established.
February	1974	Environmental Control & Safety Departments in each plant placed under direct jurisdiction of plant general managers.
August	1975	Environmental Control & Safety Management Regulations and Emergency Response Regulations formulated.
October	1989	CFC Control Countermeasures Committee established.
May	1990	Global Environment Issues Countermeasures Committee established (by reorganizing the CFC Control Countermeasures Committee).
March	1995	Participation in Responsible Care (RC) promotion.
July	1996	ISO 14001 certification obtained for the Gunma Complex.
August	1998	Environmental Charter adopted.
November	1998	First Environmental Report published.
November	1999	Companywide hearing on environmental issues.
March	2000	ISO 14001 certification obtained for all production plants in Japan.
May	2000	Final disposal facility completed at the Gunma Complex.
October	2001	Waste disposal facility completed at the Naoetsu Plant. Kashima Plant wins Minister of Economy, Trade and Industry Award for Superior HP Gas Production Facility.
July	2002	Naoetsu Plant wins Thirty-Year Special Achievement Award from the Japan Soda Industry Association.

DOMESTIC/INTERNATIONAL DEVELOPMENTS

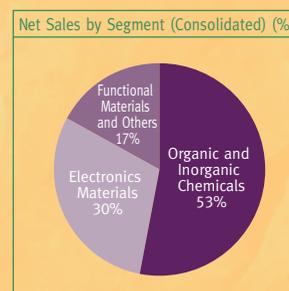
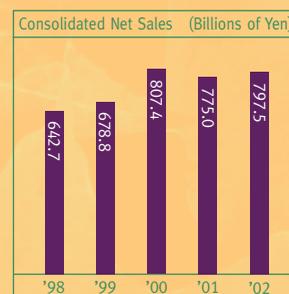
1948	The Japan Chemical Industry Association was founded.
1951	The Deming Prize was established. The High-Pressure Gas Control Law was enacted.
1967	The Basic Law for Environmental Pollution Control was enacted.
1968	The Air Pollution Control Law was enacted.
1970	The Water Pollution Control Law was enacted.
1971	The Law Concerning the Improvement of Pollution Prevention Systems in Specific Factories was enacted.
1972	The Labor Safety and Sanitation Law was enacted.
1973	The Law Concerning Examination and Regulation of Manufacture, etc. of Chemical Substances was enacted.
1975	The Petroleum Kombinat, etc. Disaster Prevention Law was enacted.
1988	The Montreal Protocol was promulgated.
1992	The UN Conference on Environment and Development (Earth Summit in Rio de Janeiro) was held.
1993	The Basic Environment Law was enacted. The Rationalization of Energy Consumption Law was enacted.
1994	The United Nations Framework Convention on Climate Change took effect.
1995	Law for Promotion of Sorted Collection and Recycling of Containers and Packaging was enacted.
1996	The international standard for environmental management systems, ISO 14001, took effect.
1997	The Waste Management and Public Cleaning Law was revised.
1998	The Law Concerning the Promotion of the Measures to Cope with Global Warming was enacted.
1999	The Law Concerning Reporting, etc. of Release to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management was enacted. The Law Concerning Special Measures against Dioxins was enacted.
2001	The Basic Law for Establishing the Recycling-based Society took effect.
2002	Provisions of the Soil Pollution Control Law was enacted. World Summit on Sustainable Development (Earth Summit in Johannesburg) was held.

>>> CORPORATE PROFILE

Date of Establishment : September 16, 1926
 Capital : ¥110,272 million (US\$918 million)
 Consolidated Net Sales : ¥797,523 million (US\$6,646 million)
 Consolidated Net Income : ¥73,016 million (US\$608 million)
 Number of Employees : 2,672 (16,573 on a consolidated basis)
 Head Office : 6-1, Otemachi 2-chome, Chiyoda-ku,
 Tokyo 100-0004, Japan

Phone : +81-3-3246-5091
 Fax : +81-3-3246-5096
 URL : <http://www.shinetsu.co.jp>
 Information : Public Relations Department
 6-1, Ohtemachi 2-chome, Chiyoda-ku,
 Tokyo 100-0004, Japan

Phone : +81-3-3246-5091
 Fax : +81-3-3246-5096



ISO 14001 Certification of the Shin-Etsu Group

Company	Certification Date	Certification Number	Certifying Agency
Shin-Etsu Chemical			
Gunma	7/1/1996	JCQA-E-002	JCQA
Takefu	12/25/1998	JQA-EM0298	JQA
Naoetsu	5/31/1999	JCQA-E-0064	JCQA
Kashima	3/21/2000	JCQA-E-0126	JCQA
Shin-Etsu Handotai Group			
Shirakawa	1/21/1997	E9073	SGS - Yarsley
Takefu	7/24/1997	E10362	SGS - Yarsley
Isobe	11/10/1997	E11339	SGS - Yarsley
Saigata	12/16/1997	E11540	SGS - Yarsley
Mimasu Semiconductor	1/19/1998	E11804	SGS - Yarsley
Nagano Electronics Industrial	2/20/1998	E12319	SGS - Yarsley
Naoetsu Electronics Industrial	7/28/1998	E13930	SGS - Yarsley
S.E.H. Malaysia	5/7/1998	S027001058	SIRIM
S.E.H. America	9/25/1998	33486	ABS
S.O.E. (Taiwan)	11/18/1998	90 104 8198	TUV
S.E.H. Europe	1/26/1999	E00053	NQA
S.E.H. Taiwan	8/24/1999	T992009	LLOYD'S
S.E.H. Shah Alam	9/20/1999	S034301099	SIRIM
Shin-Etsu Engineering (Kashima)	3/21/2000	JCQA-E-0126	JCQA
Nisshin Chemical Industry	4/24/2000	JCQA-E-0137	JCQA
Shin-Etsu Quartz Products			
Takefu	1/5/2000	35154	ABS-QE
Koriyama	6/14/2000	35155	ABS-QE
Sasebo	10/21/2002	36806	ABS-QE
Hukui	6/20/2002	36800	ABS-QE
Naoetsu Precision	10/23/2000	JCQA-E-0187	JCQA
JAPAN VAM & POVAL CO., LTD. (formerly of Shin-Etsu Vinyl Acetate)	1/11/1999	JCQA-E-0042	JCQA
Shin-Etsu PVC	6/1/1996	87818	BVQI
CIRES	11/20/2002	02/AMB.070	APCER
Shin-Etsu Silicone Taiwan Co., LTD.	6/6/2000	E18050	SGS-Yarsley

Note: Details of Shin-Etsu Polymer Co., Ltd.'s ISO 14001 certification and its environmental protection programs can be found in that company's environmental report.

