



Environmental Report

2002

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>>> Editorial Policy

This Environmental Report is published to announce Shin-Etsu's environmental activities and achievements, as well as its plans for future activities.

Five years of research are reported in the Shin-Etsu Chemical Co. Chair of Environmental Engineering section (Page 5).

We have chosen the Naoetsu Plant as a representative case to introduce the reader to environmental activities at our manufacturing facilities (Page 6).

Period covered by this report:
April 1, 2001 through March 31, 2002.

It is with great pleasure that I present this Environmental Report to the community members closely associated with our Company, our customers, shareholders and investors. We have prepared this report so that you can better understand what the Shin-Etsu Group has been doing to help manage the environment.

The entire world is involved in trying to solve environmental problems, from the “Earth Summit” held in Rio de Janeiro in 1992 (the U.N. Conference on Environment and Development) to the Johannesburg Summit in 2002 (the World Summit on Sustainable Development). That is why some people are calling the 21st Century “the Century of the Global Environment.” With all of these environmental activities going on around the world, responding to environmental issues is becoming more and more important to corporate management.

Taking safety and environmental protection as our top priorities, we at Shin-Etsu and the Shin-Etsu Group have adopted the management goal of “safety and environmental protection first.” We have even made these priorities an integral part of our business operations. Because we are determined to resolve these environmental issues, we have invested \$16.5 billion in environmental protection over the past 10 years.

Preventing air and water pollution and reducing the emission of hazardous substances are among the effective steps taken as part of our environmental management. As a Group, we are energetically implementing pollution control technologies and equipment as well as following through on measures to conserve resources and energy. Our development of products with minimal environmental impact is highly regarded in the marketplace.

To strongly promote environmental management, guidelines for our Group were adopted in 1998 and published in our Environmental Charter. All of the manufacturing facilities of Shin-Etsu Chemical Co., Ltd. and Shin-Etsu Handotai Co., Ltd. have achieved ISO 14001 environmental management system certification, and we are constantly engaged in improving our environmental activities.

This Environmental Report is intended to introduce not only our environmental protection activities and daily environmental control measures, but also to showcase the environmentally friendly materials and products put on the market by our manufacturing facilities during the fiscal year. We believe this is in keeping with our obligation to disclose the Company’s and the Group’s environmental preservation measures.

We strongly believe that environmental protection is the most important issue we face—now and in the future. At each of our manufacturing facilities and business locations throughout the world, we are going all-out to fulfill our duties as a good corporate citizen and to promote the interests of society and the environment.



November 2002
Chihiro Kanagawa
President & CEO

In pursuit of the realization of a sustainable society, in August 1998 the Shin-Etsu Group published its Environmental Charter. This Charter sets forth environmental management guidelines for the entire Group to follow in tandem with its worldwide expansion. Each plant devises its own environmental policy, based on the Environmental Charter, to guide its operations.

With “primary emphasis on safety and environmental protection” as a management goal, we have been reducing by-products and emissions, building a structure that reduces environmental impact to the maximum possible degree. Further, a single misstep can cause an explosion with substantial environmental consequences as well as significant danger to life, and we have implemented thorough safety measures to prevent this.



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.
2. Shin-Etsu regularly revises its goals to pursue continual improvements in its environmental performance.
3. 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.
4. 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.
5. 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.

›› Promoting Environmental Management



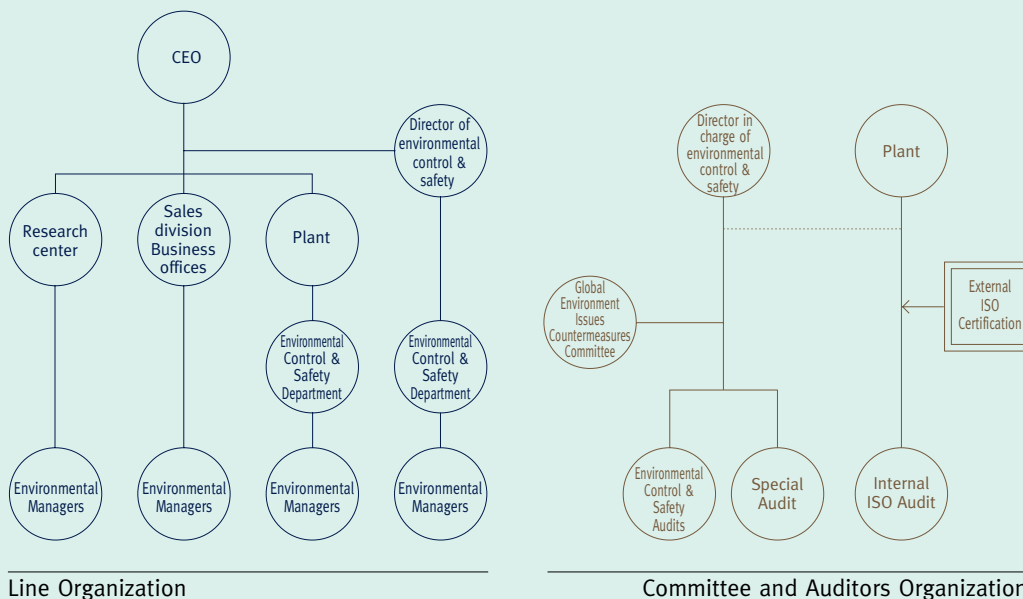
Fumio Akiya
Senior Managing Director in Charge
of Environmental Control & Safety

Shin-Etsu's most important measures in promoting environmental management are reductions in the environmental burden and environmental risk associated with its business operations, and the establishment of sustainable management to increase the efficiency of the Group's resource utilization. Together with this, Shin-Etsu believes it has a mission to develop new materials that enhance the efficiency of resource utilization, and to introduce advanced technologies to develop low-environmental-impact materials for use in future products. Through these efforts, the Company is seeking to reduce environmental impact on society. Further, the combined effects of environmental management in both our manufacturing operations and our R&D activities allow us to contribute to the building of a sustainable society.

■ The Structure and Organization of Environmental Management

To promote environmental management, in May 1990 Shin-Etsu established its Global Environment Issues Countermeasures Committee, headed by the Executive in Charge of Environmental Control & Safety. Various working groups have been established to address separate environmental protection issues. These working groups draw their members from a wide spectrum of related departments, and address the issues from a Companywide perspective.

All environmental management policy and goals, health and safety guidelines, and related matters have been brought under the purview of our headquarters' Environmental Control & Safety Department. In addition, the environmental control & safety department at each plant provides technological support for environmental protection to the various manufacturing departments, and has charge of our relations with industry associations, local governments, and other cognizant government agencies.



Shin-Etsu has been engaged in such environmental activities as promoting the use of chemical by-products, the development of eco-products, and various measures to reduce environmental impact. These efforts have had concrete results. Shin-Etsu makes numerous proposals to continuously promote vigorous environmental protection activities within the Group.

■ Promotion of Measures for Prevention of Environmental Pollution

We promote measures to prevent environmental pollution, focusing on the following issues to enhance preservation of the water and air, as well as environmental preservation on a global basis.

- Enforcing measures for the treatment of water to be discharged
- Reducing greenhouse gases
- Accomplishing energy-saving
- Properly treating chemical substances
- Reducing waste and promoting recycling
- Noise reduction measures
- Decreasing the burden on the environment through R&D of new technologies
- Selecting handling standards for chemical substances

■ Promotion of Energy Saving

We are reducing our consumption of fossil fuels by increasing the efficiency with which steam is utilized in power generation.

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

■ Achieving Zero Emissions (Reduction of Waste Materials)

We have reconfirmed that much of the waste from production activities consists of by-products generated through chemical reactions, sub-materials such as solvents, non-response main materials—and for the type of waste, many are organic/inorganic sludge, waste oil, and waste acid. We plan to achieve zero emissions by promoting the reduction of the amounts used and through recycling/reproduction of resources using waste, etc.

- Reproducing resources from inorganic sludge to cement materials
- Collecting valuable metals and recycling them as raw materials

As one of the activities marking the 70th anniversary of Shin-Etsu's founding, the Company sponsored a chair at the University of Tokyo's Global Environmental Laboratory for five years. It was a research-oriented position, and a symposium, discussed below, was held to present research results at the end of the five-year period.

■ Research Conducted

Our intent in sponsoring this chair was to spark the development of environmental engineering technologies that address environmental problems. Significant results were obtained. The following are the principal research themes set for the position.

- 1) Developing and investigating ways of ameliorating global warming
- 2) Developing solar energy systems
- 3) Developing methods for the promotion of marine and terrestrial CO₂ absorption
- 4) Developing systems for the effective utilization of resources
- 5) Developing solar batteries and fuel cells

■ Symposium on the Shin-Etsu Chemical Co. Chair at the Global Environmental Laboratory

On April 26, 2002, a symposium was held at Tokyo University's Sanjoh Hall to review the result of the Global Environmental Laboratory's chair that Shin-Etsu has sponsored for the previous five years. Numerous participants included corporate researchers and academics, as well as Tokyo University faculty members.

The symposium's opening remarks were given by Professor Hiroshi Komiyama, head of the Global Environmental Laboratory (GEL) of the Engineering Research Department of the Graduate School of Engineering at Tokyo University, which was the governing body for the five-year program. Next, Professor Yukio Yanagisawa and Professor Hiroshi Takahashi, both of Tokyo University and both previous occupants of the chair, gave a lecture presenting the results of research conducted over the previous five years. Following this, Professors Yanagisawa and Takahashi joined a former head of GEL to present a lecture on social and technological trends in environmental protection. During the intermissions, attendees engaged in a lively exchange of opinions, making for an information-intensive symposium.



■ About the Chair of Environmental Engineering

The GEL was established by the Engineering Research Department of the Graduate School of Tokyo University as a forum for lateral cooperation and the exchange of information on research into global warming countermeasures among specialists in the field, graduate students in the physical sciences, and research institutions. The department established the Chair of Environmental Engineering as a locus for concrete educational activities. Since 1991, IBM Japan and Tokyo Gas supported the chair for three years each, and Shin-Etsu has supported it for the five-year period beginning in 1997.

>>> Environmental management system at the Naoetsu Plant

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

In this Environmental Report we will address environmental activities at the Naoetsu Plant.

Niigata Prefecture's Jouetsu City, which borders the Naoetsu Plant, is the first among Japan's municipalities to achieve ISO 14001 certification, marking it as one of the most environmentally aware of Japan's cities.

Shin-Etsu Chemical's Naoetsu Plant, which is the Company's birthplace, began its operations with the production of carbide and nitrogen fertilizer. It has since converted to the manufacture of high-performance materials using organic synthetic chemistry and the most advanced technologies.

The Naoetsu Plant

Location	28-1, Nishifukushima, Kubiki-mura, Nakakubiki-gun, Niigata
Established	September 1926
Site area	Approximately 560,000m ²
Principal products	Caustic soda, chloromethanes, silicones, cellulose derivatives, synthetic quartz glass products, aroma chemicals, synthetic pheromones, chlorosilanes, photoresists.



Mr. Hayakawa who is a manager of the Specialty Chemicals Research Center's Department of Research explains how cellulose derivatives are environmentally friendly products.

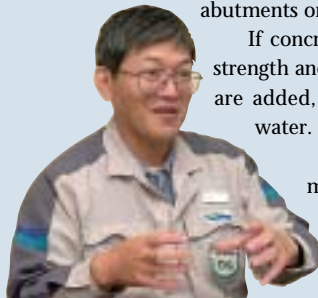
Cellulose derivatives, Mr. Hayakawa related, are made from natural fibers and have, therefore, little environmental impact. They find many applications in fields as diverse as construction, civil engineering, agriculture, ceramics, and paper milling, and contribute to the safety of pharmaceuticals and cosmetics. Dissolved in water, tasteless, odorless, white cellulose powder becomes a viscous, floury solution. Cellulose derivatives have a number of useful properties, such as solubility in organic solvents, resistance to salting out, surface activity, thermal gelation, shape retention, water retention, lubricity and film forming.

The use of cellulose derivatives in concrete admixtures is growing, and these environmentally friendly products are attracting a good deal of notice for their usefulness in preventing pollution of the oceans.

Recently, cellulose derivatives have been used as hardeners in concrete bridge abutments on the Tokyo Bay Aqualine and other marine bridges.

If concrete is submerged in salt water before it hardens, it crumbles, losing its strength and polluting the surrounding waters. However, when cellulose derivatives are added, the resulting viscosity prevents the concrete from mixing with the water.

Shin-Etsu researchers visited construction sites and used local materials to ensure that the needed strength was actually realized. This generally required an entire month on the site, and their willingness to undertake this grueling duty demonstrates their deep involvement in this issue.



Promoting Positive Actions on Environmental Issues

The Naoetsu Plant has the most diverse product line of any of Shin-Etsu's plants. The plant is located within the Naoetsu Special Regional Disaster Prevention Area, which is designated in the Petroleum Kombinat, etc. Disaster Prevention Law*, and, because it handles a high volume of hazardous substances, the plant's layout is subject to regulation.

The plant must also comply with numerous other laws and regulations, for example the High Pressure Gas Safety Law, the Fire Service Law, the Poisonous and Deleterious Substances Control Law, and the Pharmaceutical Affairs Law. The Petroleum Kombinat, etc. Disaster Prevention Law requires that the plant's main north-south road be a minimum of ten meters wide and that a fire hydrant for fire trucks be located within seventy meters of the manufacturing facilities. The plant has three fire engines, one with an elevated water cannon capable of combating a fire from 25 meters above the facility, a second that can use chemical foam, and a third one, which is a regular fire engine. The plant has continued to comply with regulatory changes throughout its history, and will continue to do so, even as we replace and renovate our existing manufacturing facilities.

*The Petroleum Kombinat, etc. Disaster Prevention Law is a law intended to prevent disasters at petroleum complexes and similar industrial facilities.

On environmental issues, the plant is also striving to ensure compliance with new legislation, including the Law Concerning Reporting, etc. of Release to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management and the Law Concerning Special Measures Against Dioxins. The plant has many kinds of products that are connected to each other in a manner similar to organic matter. This gives the plant the appearance of an industrial complex. This concept is in line with our basic idea of using chemical substances generated in the production process and reducing waste materials as far as possible. In 1999 the plant implemented an ISO 14001 environmental management system, based on the same ideas. This system is designed to realize manufacturing methods that offer superior safety and efficiency in our chemical materials manufacturing processes, as well as to reduce the burden on the environment. Further, the plant is designed to prevent environmental pollution as a result of natural disaster, accident, or other unforeseen circumstance. To minimize the severity of pollution should worse come to worst, we have published an accident response manual that sets forth detailed procedures.

*The Law Concerning Reporting, etc. of Release to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management is a law intended to further the awareness and control of emissions of designated chemical substances into the environment.

Mr. Suzuki, General Manager of the Naoetsu Plant's Environmental Control & Safety Department, explains the notable features of the plant's environmental protection activities.

Daily environmental protection activities go hand in hand with safety activities in the plant's manufacturing facilities, and are centered on production departments 1 through 6. The Environmental Control & Safety Department has a broad range of functions, including the drafting of proposals for the entire plant's environmental protection planning, technological support for daily environmental protection activities, and participation in each production department's safety meeting.

Because its purview is so comprehensive, the staff of the Environmental Control & Safety Department is made up of technicians with experience in the production field.

In addition to these in-house programs, windows to the world outside the department are also important. Through the public relations operations of relevant government agencies and through interaction with fire service, high-pressure gas, labor safety and sanitation, and environment societies, the department energetically pursues information exchange. The plant also invites local residents to see the plant's incident-response training, cooperating with our General Affairs Department in playing a part in interaction with the local populace.



Main Road



Hydrant for fire-truck use

Mr. Kimura, a Department Manager of the First Production Department, and Mr. Shitaokoshi, Department Manager of the Third Production Department, explain the routine environmental protection activities of each department.

Mr. Kimura, a Department Manager of the First Production Department, explains the routine environmental protection activities of the department.

The First Production Department manufactures caustic soda and chloromethanes, and continuously operates for 350 days a year. We are also giving a high priority to the maintenance of machines and facilities, because of their long years of operation.



First Production Department, Section 1 members, and department manager Kimura, who is third from the left in the front row.

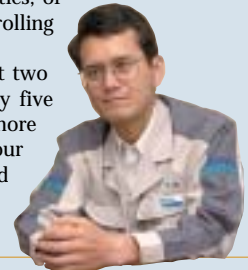
Environmental protection activities include countermeasures against wastewater discharge and atmospheric emissions, with particular emphasis on procedures to prevent the discharge of wastewater containing hazardous substances.

Through a tradition of good procedures and practical efforts on a daily basis, section 1 of the First Production Department has achieved a record of 30 accident-free years of operation. In July 2002, this achievement was recognized by the Japan Soda Industry Association at its annual Technology and Safety Meeting, where the division received a Thirty Year Special Achievement Award for accident-free operations.

Mr. Shitaokoshi, Department Manager of the Third Production Department, explains the routine environmental protection activities of the department.

The department handles high-pressure gas and hazardous materials, and manufactures cellulose derivatives. In its environmental protection activities, the department emphasizes earthquake countermeasures. This involves the inspection, maintenance, and repair of facilities, of course, but also extends to repeated training in worst-case procedures for controlling and minimizing hazardous material spills.

There is a great deal of noise in the work area from shredders and fans, but two years ago the department took measures to reduce the noise by approximately five decibels. Because there was a heat wave last summer, the department installed more spot coolers to improve the working environment and safeguard the health of our employees. In addition, the Third Production Department has implemented thorough waste separating procedures and increased the volume of its recycling, and is striving to reduce the volume of waste generated by the department.



Focusing on Routine Safety and Environmental Protection Activities



There are six manufacturing divisions at the Naoetsu Plant, each of which handles very different chemicals from the others. For this reason, each manufacturing division independently conducts monthly accident and disaster response training. Once a year consolidated training is conducted for the entire plant, with participation by local fire departments. The plant opens to the public for this event, helping to forge a high level of trust with the people of the surrounding community.



Tanker truck for use of integrated transport system

Recently, a tanker truck belonging to another firm overturned in Ishikawa Prefecture while carrying hazardous materials. The Naoetsu Plant's manufacturing and shipping staff responded to the accident, promptly arriving at the site and assisting in the cleanup. Since this incident, plant personnel have participated in the tanker truck accident response training of Ishikawa Prefecture organizations.

Shin-Etsu issues yellow cards¹ to shipping companies that transport hazardous materials. These cards are used to outline the measures to be taken in case of traffic accidents and other unforeseen emergencies. Shin-Etsu also conducts education to ensure the safe transportation of chemical substances by MSDS². To further promote safety in shipping, Shin-Etsu is increasing its use of the modal shift integrated transport system, which links trucks and railways.

1. Yellow cards, issued to the drivers of vehicles transporting hazardous materials, give information on safety and the handling of hazardous materials.
2. The Material Safety Data Sheet lists information on chemical substances.

At the Naoetsu Plant, all divisions are engaged in recycling. In October 2001 a new waste incinerator was completed, and the plant took advantage of that occasion to further strengthen its waste-separating and recycling procedures, particularly those for paper. The completion of this incinerator made it possible for the plant to dispose of its own waste oil, sludge, and miscellaneous waste substances, which has greatly reduced the plant's waste disposal expenses, and contributed to the target of zero emissions.



Separated waste



Waste disposal facility

Mr. Sato, President of Naoetsu Sangyo Co., Ltd., a member of the Shin-Etsu Group that has responsibility for the Naoetsu Plant's transport operations, explains his views on the eight-man Emergency Support Team, organized at the request of local governments following the January 2001 tanker truck accident in Ishikawa Prefecture.

Mr. Sato informed us that he learned of the accident, which occurred at 2.00am, from the morning television news.

Although the accident involved a different firm, the spilled hazardous materials are similar to the Naoetsu Plant's products, and the accident was not without implications for us as a firm involved in the transport of these chemicals. Immediately after Mr. Sato arrived at work, Ishikawa Prefecture Fire Department issued a request for support, so he immediately put together a support team. Gathering together the equipment and materials needed to remove the spilled chemicals, the team left for the accident site shortly after noon.

Cleanup had already commenced under the supervision of the region's headquarters fire department when the Shin-Etsu team arrived on the scene. After the representative of the cargo owner arrived, the tanker was moved to a safer location, and the work of transferring the remaining chemical cargo to empty containers was begun. Work continued for about ten hours, and the equipment brought by the Shin-Etsu team, which included everything from a mobile gaseous emissions recovery system to flexible hoses and gaskets, was put to good use. Our people also assisted in testing the homes of evacuated citizens for toxic gases. The gas detection equipment the team had brought was very useful, and allowed the evacuation order to be lifted after approximately 17 hours.

The Shin-Etsu team was able to assemble the materials and equipment they would need on the scene despite the limited time available for preparation, and we think this is attributable to the regular emergency response training conducted by each of our manufacturing departments.

This accident prompted an industry association in this field to conclude a letter of agreement regarding mutual assistance in the event of shipping accidents.

At the invitation of Ishikawa Prefecture, the Naoetsu Plant participated in comprehensive disaster response training held in 2001. This training was organized around a scenario of an accident involving a tanker truck transporting hazardous materials on an expressway in another prefecture. This training contributed greatly to communication within the region.






>>> Eco-products and technology

Since Shin-Etsu Chemical is the largest manufacturer of polyvinyl chloride in the world, its image is that of a manufacturer in the petrochemical industry. In fact, however, 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.

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.
Synthetic pheromones 	Mating disruptant	Harmonization with ecosystem, ecological agrochemicals	Since it is a synthetic natural substance with minimal toxicity that also decomposes into water and carbon dioxide in the natural environment, it is environmentally friendly compared with former agrochemicals.
Cellulose derivatives 	Admixture for underwater concrete	Prevents water contamination	Prevents water contamination at the time of construction and enables the reduction of the quantity of effluent.
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.

*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
Silicone	For plastic (modified resin)	Reduces adverse effects on the environment	By not using environmentally hazardous substances, improves safety and is superior to recyclability.
Typical form of silicone	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 the molding and increase in productivity.
	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.
Form of silicone rubber 	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.



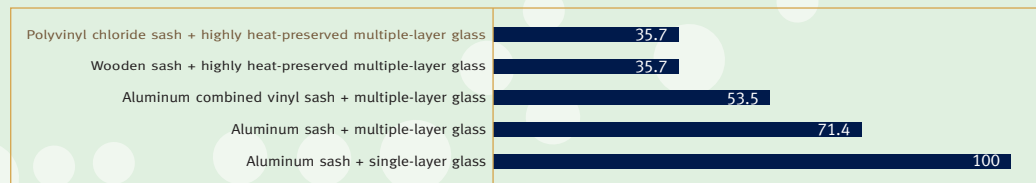
Polyvinyl Chloride Sash

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 and preserve heat.

Ecological Performance of the Product

This material is superior in retaining heat; in this regard, it is 1,000 times greater than aluminum. When used as a window frame, it enables a reduction in energy consumption by up to half at the stage of heating and cooling in comparison with our former products. As a result, it can effectively save energy, equivalent to 436 liters of lamp oil (per household annually). In Germany, an environmentally advanced nation, its usage for window frames has become common, and the ratio of its usage is over 50%. In Japan, its usage is spreading, mainly among districts that experience comparatively colder weather.

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



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



Control of Destructive Insects

Pheromones represent a revolutionary change from insecticides as a means for controlling destructive insects. Synthetic pheromones, used, for instance, in apple, peach, pear, or plum orchards, reduce the numbers of destructive insects by inhibiting their mating behavior.

Product Eco-performance

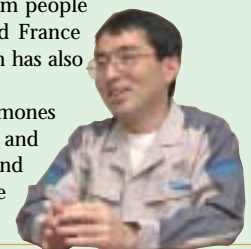
Synthetic pheromones are chemical compounds that chemically resemble the natural pheromones that regulate insect sexual behavior. Only very small amounts are required, and they are far less toxic and much more selective than insecticides or agrochemicals. They also have less of an effect on predators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

We asked Mr. Fukumoto, manager of the Specialty Chemicals Research Center's Research Department, about the current situation with regard to pheromones.

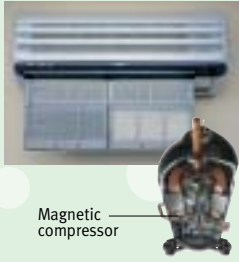
Pheromones are effective, Mr. Fukumoto told us, above a certain level of acreage under cultivation. In Japan, pheromones are primarily used on apple, peach, pear, and other fruit trees, and in Europe, the use of pheromones on grapes is increasing.

In recent years, a movement has arisen in Europe to curtail the use of existing agrochemicals, which have a large effect on the environment. Shin-Etsu receives many inquiries from people interested in using pheromones to protect their crops. Italy, Germany, and France have taken the lead in pheromone use, but interest in pheromone use in Spain has also been growing recently.

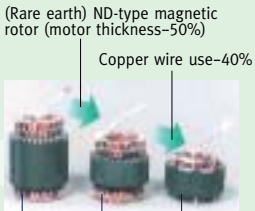
Insecticides are still the primary agents used in the fruit industry; pheromones still occupy a secondary role. However, with the growing use of predators and other natural pest-control methods in the search for environmentally sound agriculture, pheromone usage will become increasingly common. We continue to prepare for that eventuality through our research in this field.



Eco-Friendly Products ③
Rare Earth Magnets



Magnetic compressor



(Rare earth) ND-type magnetic rotor (motor thickness-50%)

Copper wire use-40%

New-type DC motor (CWM)

Ordinary DC motor

Ordinary AC motor

Motors Used for Air-Conditioning Compressors

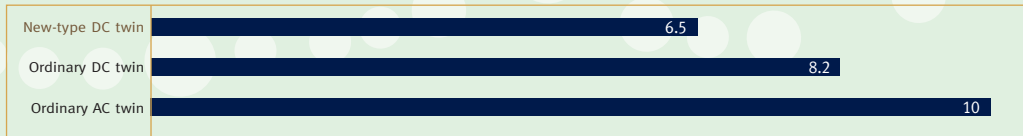
Rare earth magnets are high-performance, permanent magnets whose ingredients are of rare earth type such as neodymium and samarium. They possess a strong magnetic power and are used for the hard disk drives of computers, stereo headphones, as well as motors for factory automation (FA) and office automation (OA) equipment. Also employed for air-conditioning compressors for which a highly efficient motor is essential, they are highly evaluated as a new energy-saving motor.

Ecological Performance of the Product

The reduction of the size and weight of the motors was realized by using rare earth magnets, a high-performance permanent magnet, for air-conditioning compressors. The capacity and weight of the motors was reduced to 85% of the ordinary motors, and the use of copper wire for the motors was reduced 40%.

In addition, the COP (efficiency of energy consumption) was improved by 5% to 10%, and the amount of power consumption was largely reduced. In this way, we contribute to the achievement of energy saving, reduction of the amount of discharge of CO₂ and the prevention of global warming.

Weight Comparison of Compressors (kg)



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

Eco-Friendly Products ④
Silicone



Silicone for Plastic

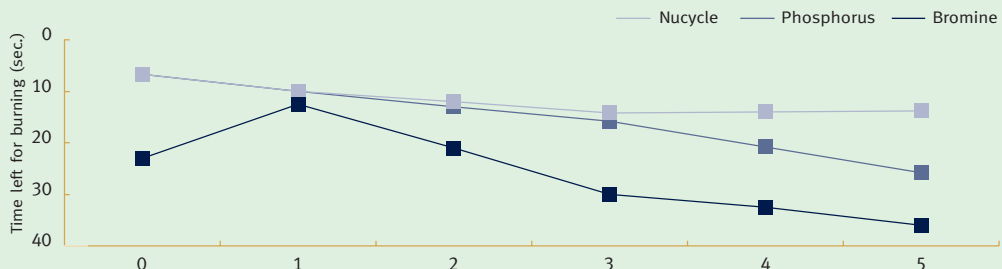
Applications related to modified silicone resin quality improvement have been developed in a number of fields. A typical example is "Nucycle," a product jointly developed and manufactured by NEC Corp. and Sumitomo Dow Ltd.

This ecoplastic, featuring an additive of silicone flame retardant jointly developed by NEC Corp. and Shin-Etsu Chemical, is employed in the housing of liquid crystal displays and the bodies of personal computers.

Ecological Performance of the Product

Nucycle, supplemented by a flame retardant agency of new silicone type, can retard fire to a greater degree than a flame retardant agency adding toxic substances such as halogen (bromine) and phosphorus. Its shock intensity has also been greatly enhanced. Moreover, it can be reused for electric device-related materials such as PC bodies, since it maintains a flame retardant nature even when material recycling is repeated. As such, it contributes greatly to the construction of a "cyclical 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.

The Shin-Etsu Group's environmental activities are built around each department's environmental supervisor and environmental control and safety department, and are implemented globally.

Shin-Etsu and its principal subsidiaries have a fundamental environmental management system that involves every employee in environmental management efforts. In pursuit of environmental protection programs suited to our production sites, in July 1996 our Gunma Complex became the first among Japan's major chemical companies to attain ISO 14001 certification. All our domestic plants completed certification in 2000, and we are rapidly moving toward completion of the certification of our overseas manufacturing bases. Taking certification as a new starting point, our plants are further improving their environmental protection activities in an effort to reduce the environmental burden of their operations.

(For further information on the ISO 14001 status of Shin-Etsu and its principal subsidiaries, see page 25.)

■ Internal Audit and Inspection Systems

A number of organizations and systems have been established at all plants to conduct internal audits and inspections. These organizations act independently, in close cooperation with labor and management.

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 audits are circulated to all executives and to the audited plants, and problems identified are tracked until shown to be resolved upon a subsequent audit.

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, study environmental and safety implications, and identify areas that need improvement.

Labor and Management Safety Patrols

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

Hazard and Operability Study (HAZOP)

HAZOPs are designed to allow improvement in work procedures and facilities by anticipating potential malfunctions in manufacturing facilities and the resultant environmental pollution. 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.

Self-Monitoring and Audit Programs

(Number of cases)

Fiscal year	'90	'95	'96	'97	'98	'99	'00	'01
Environmental control & safety audits	4	8	8	11	10	12	12	8
Safety examination committees	51	47	34	53	45	48	50	50
Labor/management safety patrols	30	30	30	30	30	30	30	23
Number of HAZOP studies	-	45	38	41	43	38	35	27

Environmental Protection Activities in Our Manufacturing Operations

By-products, wastewater, and gases are emitted in our manufacturing operations. These we recycle to the maximum extent possible, and what cannot be recycled we reduce in volume and neutralize before disposal.

In response to environmental problems from the local scale to the global, all Shin-Etsu plants and business locations have adopted policies calling for reductions in emissions of greenhouse gases, energy conservation, reductions in waste generation, and the proper handling of chemicals. We continuously work to further reduce the environmental burden of our operations through improvements to these programs.

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 of conserving energy. We implement heat recovery technology in capturing and reusing heat emitted by the steam from our boilers, and generate our own electricity to minimize loss of electrical energy, greatly reducing our need to buy power from electric utility companies. To achieve further conservation of energy, we are implementing various technologies to enhance the efficiency of our electric-power utilization. In fiscal 2001, these efforts resulted in energy savings equivalent to over 72,000 barrels of crude oil. We will continue to install and upgrade boilers and cogeneration systems in the future.

Preventing Global Warming

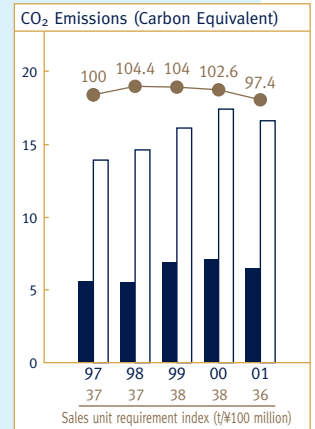
Restricting and reducing greenhouse gas emissions

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

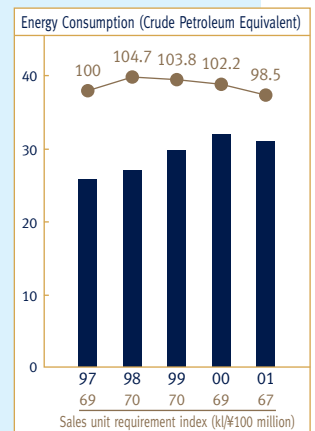
Reducing CO₂ Emissions through the Use of Cogeneration Systems*

At Shin-Etsu, we are strongly promoting the use of cogeneration systems, which are installed at the Naoetsu Plant and the Gunma Complex. This has resulted in more efficient energy utilization and reduced consumption of fossil fuels, as well as reduced emissions of CO₂ and other greenhouse gases. In 2001, we reduced our CO₂ emissions by approximately 33,000 tons (which represents approximately 8,900 tons of carbon). Shin-Etsu alone cut emissions by approximately 5%.

*Cogeneration systems supply both heat and electricity. The waste heat from electricity generation is recovered and used, which decreases both fossil-fuel consumption and the emission of CO₂ and other greenhouse gases.



■ Excluding that purchased from power companies
 □ Including that purchased from power companies
 ● Requirement index (%)



■ Energy Consumption (10,000 k)
 ● Requirement index

■ Proper Handling of Chemicals

Shin-Etsu has always exercised close control over the chemicals it purchases as materials, as well as over the chemicals it manufactures through various industrial processes. Some of these diverse chemicals are harmful to the environment or to health, and Shin-Etsu has numerous safeguards in place to prevent accidents or discharge to the environment.



■ Pollutant Release and Transfer Registers (PRTR)

Shin-Etsu reports on new specific chemical substances¹ and small amounts of new specific chemical substances,² as required by law and regulation, and, in accordance with the PRTR Law³, is implementing systems to quantify any release of specific chemical substances. Our Naoetsu and Kashima plants are cooperating with the government's pilot PRTR program, and so implemented the system early on. As a result of their involvement, they are on track with the notification and disclosure requirements of this April 2002 law.

In accordance with the intent of the PRTR Law, we are working to reduce the release of specific chemical substances. We have achieved significant progress in this effort through sealing manufacturing facilities and installing incineration equipment for gaseous emissions. We are conducting soil testing for dioxins, and, in accordance with the Law Concerning Special Measures Against Dioxins, we have installed automatic clarifier equipment and filters in the secondary water discharge lines to reduce dioxin concentrations.

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.

Investment in Environmental Protection Facilities

To ensure safety and protect the environment, Shin-Etsu continually invests in manufacturing equipment and environmental protection facilities at all its plants and business locations.

Shin-Etsu makes capital investments in air-pollution countermeasures, water-quality protection measures, noise-pollution countermeasures, and waste-disposal measures, for the purpose of reducing the environmental burden of its operations. In addition, Shin-Etsu has installed cogeneration systems to reduce energy consumption, and has taken other measures in its facilities to use energy more efficiently. Shin-Etsu is continually making investments for the purpose of reducing its greenhouse gas emissions. These investments for the past ten years total ¥16.5 billion.

Major investments made recently include:

- Installation of a waste incinerator at the Naoetsu Plant
- Upgrade of wastewater treatment facilities at the Naoetsu and Takefu plants
- Upgrade of the Nagayatsu industrial waste disposal site at the Gunma Complex
- Upgrade and rationalization of PVC facilities, including environmental countermeasures, at the Kashima Plant
- Other facilities and equipment to reduce gaseous emissions, noise pollution, and energy consumption, and the installation of cogeneration systems.

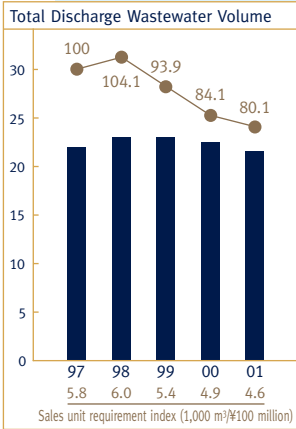
Production and Distribution of Material Safety Data Sheets

To ensure safety and environmental protection through the proper handling of chemical substances, we have implemented a material safety data sheet (MSDS) system. The Shin-Etsu Group prepares an MSDS for each product, and, to aid in safety and environmental protection, provides them to employees and users. We receive MSDS's from suppliers of raw materials, and use them in practice for proper handling by employees.

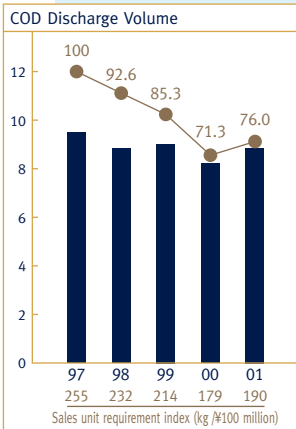
Production and Distribution of Yellow Cards

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.

Change in Activities Relating to Control of Chemical Substances									Number of cases
Fiscal year	1990	1995	1996	1997	1998	1999	2000	2001	
Material safety data sheets prepared	-	4,400	4,900	5,800	6,000	6,900	7,000	8,000	
Yellow cards issued	-	10	22	90	100	100	120	178	
Substances subjected to PRTR notification requirement	-	20	31	51	53	60	64	62	Report to industry group on the status of self-management
Small-quantity chemical substance notifications	625	566	578	613	599	562	535	576	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
New chemical substance notifications	15	18	17	8	11	16	5	23	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



■ Total Discharge Wastewater Volume
● Requirement index (%)



■ COD Discharge Volume
● Requirement index (%)

Protection of Water Quality and Management of Final Effluent

Total discharge volume and chemical oxygen demand discharge volume

Shin-Etsu practices recycling and other measures to conserve water, and has maintained the same total wastewater discharge volume despite growth in production volume. COD* discharge volume has declined despite increases in production.

*Chemical Oxygen Demand:

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

Protection of water quality and management of final effluent

Most of the water used by Shin-Etsu is process water used in the manufacturing of its products and in cleaning, or is 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.

Monitoring final effluent

To ensure compliance with regulations regarding pollutant concentrations in wastewater, we conduct 24-hour-a-day monitoring of the pH of final effluent. In addition, we conduct periodic analyses to ensure compliance with water quality regulations.

Discharge Water Monitoring (Gunma Complex)

Inspection method (item)	Frequency	Range of standard values	Normal value
pH	24 hours	5.8 ~ 8.6	6.3 ~ 7.0
TOD (total oxygen demand)(ppm)	1 time/4 hours	-	200 ~ 300

Wastewater Analysis Results	Government requirement	Prefectural requirement	90	95	98	99	00	01	Detection limit
pH*	5.8 ~ 8.6	5.8 ~ 8.6	6.7 ~ 7.6	6.7 ~ 7.8	6.3 ~ 7.7	6.2 ~ 7.7	6.7 ~ 8.2	6.3 ~ 7.8	
BOD*(ppm)	160	25 ~ 70	5 ~ 14	2.6 ~ 22	1.5 ~ 35	1.5 ~ 34	1 ~ 37	1.8 ~ 32	0.5
SS* (ppm)	200	20 ~ 120	7.7 ~ 13	0 ~ 10	4.3 ~ 40	4.0 ~ 20	2 ~ 43	5.0 ~ 24	1

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

*pH 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) 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) 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.

Prevention of Air Pollution

Production increases at Shin-Etsu resulted in a temporary increase in gaseous emissions. However, we are 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 conversion to low-polluting fuels.

Controlling Emissions from Boilers

Our boilers primarily burn fuel oil, which gives off CO₂, small amounts of NO_x and SO_x, and soot. Shin-Etsu monitors and analyzes these exhaust gases to ensure compliance with statutes and regulations governing pollutant concentrations. We have also made improvements to combustion processes and have installed additional pollution control equipment, which is reducing emissions of soot and dioxins.

Controlling Incinerator Stack Gases

Our plants incinerate the by-products, waste solvents, sludge, and rubbish that is generated from manufacturing activities. The incinerator stack gases contain CO₂, small amounts of NO_x and SO_x, soot, and extremely small quantities of dioxins.

Shin-Etsu monitors and analyzes these stack gases to ensure compliance with statutes and regulations governing pollutant concentrations. In addition, we are reducing soot and dioxin emissions through improvements to combustion efficiency and augmentation of pollution control equipment.

Boiler Exhaust Analysis Results

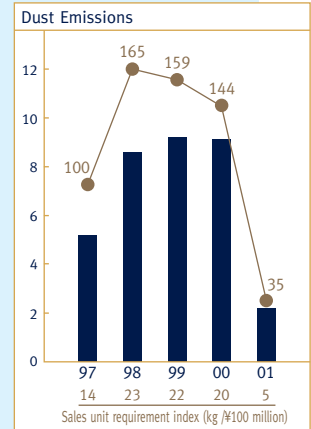
Fiscal year	Government requirement	Prefectural requirement	90	95	98	99	00	01
Dust (g/Nm ³)	0.1~0.25		<0.02	<0.02	<0.02	<0.02	<0.002~0.21	0.01
NO _x (ppm)	150~230	150~230	<200	<150	<150	<150	<60~190	<190
SO _x	K17.5	K17.5	<15	<15	<15	<15	<0.6~12.4	<9.2

(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.)

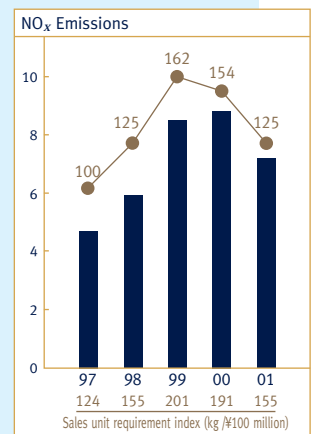
Incinerator Exhaust Analysis Results (Gunma Complex)

Fiscal year	Government requirement	Prefectural requirement	90	95	98	99	00	01
Dust (g/Nm ³)	0.15	0.15	<0.2	<0.2	<0.1	<0.1	<0.1	<0.01
NO _x (ppm)	300	300	<100	<100	<100	<100	<100	<100
SO _x	K17.5	K17.5	<2	<2	<1	<1	<1	<1
Hydrogen chloride (mg/Nm ³)	700	700	<300	<300	<300	<300	<200	<51
Dioxins (ng/Nm ³)	80 <small>(1998 / 12~2002 / 11)</small>				<0.01	<0.01	<0.01	<0.01

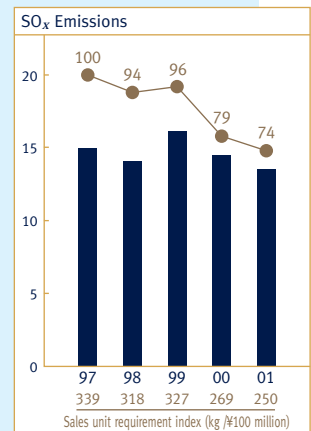
(The dust levels stipulated in government and prefectural regulations had been 0.5 until March 1999 but were changed to 0.15 beginning in April 2000.)



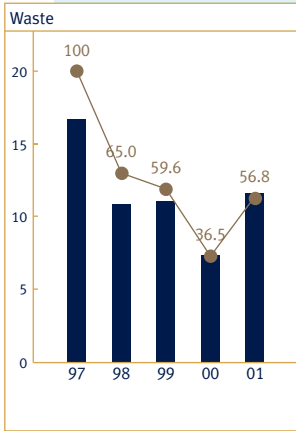
■ Dust Emissions (10t)
● Requirement index (%)



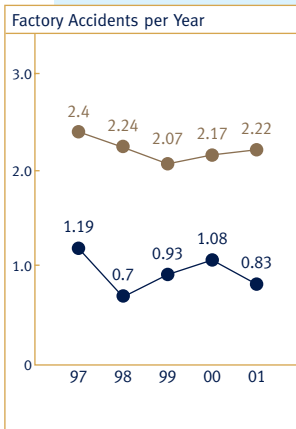
■ NO_x Emissions (100t)
● Requirement index (%)



■ SO_x Emissions (100t)
● Requirement index (%)



■ Final disposal (thousands of tons)
● Requirement index (%)



● Sin-Etsu Chemical
● Japan Chemical Industry Association study of accidents

* Occupational Safety Performance (accident rate):
Japan Chemical Industry Association Survey:
The rate of accidents requiring plant shutdown at approximately 90 chemical companies.

Other Environmental Protection Activities

Waste Reduction and Recycling Programs

We have commenced cement stabilization of inorganic waste and recycling of waste acids. Further, efforts based on the targets of ISO 14001 have allowed us to reduce our waste consignments to final disposition sites by approximately 7,400 tons, or 33%.

Reduction of Vibrations and Noise

We conduct scheduled measurements of vibrations 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 creates vibrations.

Environmental Production in the Shipping Stage

Shin-Etsu is also working to reduce the environmental impact of its shipping operations. Firstly, we have increased the efficiency of product delivery systems, and next, we have shortened shipping routes, and have created a new logistics system combining truck and railway shipping. These programs are not limited to the parent company, but encompass both the Group's shipping subsidiaries and external contractors. Reducing waste in shipping operations has reduced CO₂ emissions and energy consumption.

Participation in Industry-Level Environmental Activities

Shin-Etsu is a member of the Japan Chemical Industry Association, the Japan Responsible Care Council, the Vinyl Environmental Council, the Plastic Waste Management Institute, and other groups. Shin-Etsu participates in various programs, including industry-level PRTR inspections, public relations activities to promote a correct understanding of PVC, and efforts to improve industrial waste disposal and recycling technology.

Safety and Occupational Health Programs

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. A major accident at a chemical plant can involve not only employees, but residents of the surrounding areas as well. 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

We are utilizing safety inspection committees to maintain safety within our facilities, and the hazard and operability study (HAZOP) method to institute improvements to our facilities and industrial processes. Our periodic safety tour and safety suggestion programs have also made numerous contributions to this effort. Each of our plants has introduced various methods to prevent accidents. As a result, our occupational injury frequency rate, which refers to the number of injuries from disasters and accidents per one million man-hours, is about 1.0, and this rate is better than the industry average.

Occupational Health Programs

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

>>> Production Diagram of Main 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.



››› Environmental Risk Management

The various environmental risks connected with Shin-Etsu's operations have been carefully studied and evaluated, both at headquarters and at every plant. The headquarters' Risk Management Committee has responsibility for addressing the most important issues, selectively instituting countermeasures to resolve them.

As is the duty of a chemical firm, Shin-Etsu is earnestly addressing environmental and safety issues. For instance, Shin-Etsu has tackled important issues through special audits, ensures compliance with new environmental laws and regulations, and is involved at a Companywide level with environmental protection and hazardous material safety issues throughout the entire Company.

■ Special Audits

In addition to our regular environmental protection audits, every year we conduct special audits to address each important issue separately. The risks involved with each issue are carefully considered, and countermeasures instituted. The themes of recent special audits are as below:

- 1992 ~ 1993 : Quantitative evaluation of environmental safety management (based on OSHA safety management standards)
- 1994 ~ 1996 : Evaluation of plant and operational safety using HAZOP method
- 1997 ~ 1998 : Evaluation of hazardous reactions and countermeasures for safe operations
- 1999 ~ 2001 : Important environmental issues
- 2002 ~ : Countermeasures for corrosion and deterioration of facilities and equipment

■ Zero Accident Programs

Taking "safety and the environment first" as their fundamental philosophy, Shin-Etsu and its primary subsidiaries are energetically pursuing accident prevention programs. From fiscal 2002 forward, the Company's three-year plans will incorporate "zero accident programs" to reduce accidents due to human error. This year, Shin-Etsu is implementing a hazard awareness program and a "pointing and repeating" program 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.

■ Emergency Response

Should an accident occur despite all our preparations, we have established effective emergency response procedures, and continue to conduct periodic training in these procedures. With regard to recent accidents, both domestic and overseas, we have:

- Used simulation software to perform a quantitative evaluation of the damage done
- Strengthened our crisis communication capabilities through the establishment of systems to disseminate information to regional citizens

››› Environmental Education

To communicate the importance of environmental protection, Shin-Etsu trains all personnel in the provisions of its Environmental Charter and the environmental policies of each plant. Shin-Etsu also provides training in the importance of recycling, the separating 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.

- Waste management
- Wastewater quality management
- Exhaust gas management
- High Pressure (HP) gas safety technology
- Hazardous material handling
- Toxic chemical handling

>>> Relationship with Local Societies

The Shin-Etsu Group has built a worldwide base of satisfied customers, through its business activities, and desires to contribute to the building of a better society through various 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 since fiscal 2001.



Kashima Plant Commended by Japan Chemical Industry Association for Accident-Free Operation

Since the Kashima Plant opened in 1990, it has recorded 1,260 days of accident-free operation. For this performance, the plant was given an Accident-Free Workplace Award by the Japan Chemical Industry Association Certificate of Acknowledgement. To win this certificate, a plant must satisfy both environmental and safety requirements, and must not have experienced an accident that required the shutdown of the plant.

Local Junior High School Students Get Experience at Gunma Complex

In September fourteen eighth-graders from Annaka Junior High gained knowledge of the working world during a visit to the Gunma Complex. Shin-Etsu hosted the visit to assist in forming the foundations of a desirable work ethic and productive attitudes in future employees. The students received instruction in the plant's operations in the morning, and were then divided into two groups for chemical experiments and computer operation. In the afternoon a question and answer session was held, after which the students toured a semiconductor factory.



Kashima Plant wins Minister Award of M.E.T.I. for HP Gas Safety

In October 2001, named as a "Superior HP Gas Production Facility," the Kashima Plant has won the Minister Award of M.E.T.I. which is the highest award for HP Gas Safety. The plant was nominated for the award by the Ibaraki Prefecture Commerce and Labor Department, based on its past performance. The criteria for this award are extremely stringent, as a plant must not only have a record clear of accident or regulatory violation, but superior safety management, safety technology, and safety education programs.

Exhibition of Semicon Japan 2001

The seven firms of the Shin-Etsu Group presented a booth made entirely of recycled materials at Semicon Japan 2001, a semiconductor component and materials exhibition. The Shin-Etsu Group introduced various types of wafer and process materials, as well as peripheral materials, and showed its commitment to the environment by using recycled materials.



Takefu Plant Participates in Unified Cleanup of Oshozu River

The Takefu Plant took part in Takefu City's unified cleanup of the Oshozu River, an element of the city's "clean operation." Personnel from our Takefu Plant cleaned an area in Takefu City's Iehisacho area, together with local residents, businesses, and schools. The city plans to execute a "clean operation" every year, and the Takefu Plant looks forward to rendering every assistance.

Gunma Complex Receives Thanks of Residents for Cleanup of Surrounding Area

In May and September, the Gunma Complex held a beautification campaign affecting the area surrounding the complex. Volunteers from the Isobe Plant, the Matsuida Plant, the Gobara area, and Shin-Etsu Semiconductor's Isobe Plant together picked up 120kg of cans, bottles, broken glass, and other trash over a broad area, earning the appreciation of local residents.



Naoetsu Plant Holds Summer School

The Naoetsu Plant held a summer school the week of July 29th for the upper grades of elementary school. The teachers were new employees of the Naoetsu Plant, and they graded homework and played together with the children. This year, 35 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.

Naoetsu Plant First Production Department 1 Receives Special Commendation for 30 Accident-Free Years of Operation

The First Production Department of the Naoetsu Plant received a Thirty Year Special Achievement Award for accident-free operations from the Japan Soda Industry Association at its annual Technology and Safety Meeting. This was in recognition of its superior safety record, capped by 30 continuous years of accident-free operation. (An interview with General Manager Kimura of Manufacturing Division 1 begins on page 8.)

>>> History of Environmental Activities

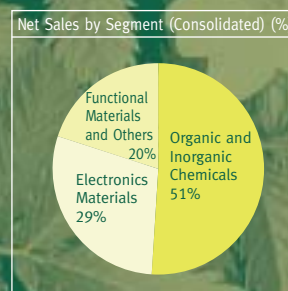
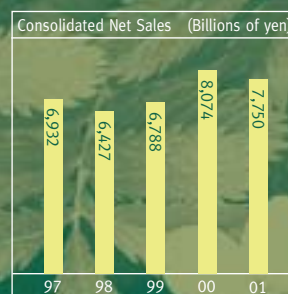
Shin-Etsu Chemical has engaged in quality control ever since 1950, quite an early period for such activities. In 1953, we established work manuals and work standards and were awarded the Deming Prize. We received praise from Dr. Deming himself, who stated that in terms of the level of statistical quality 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 Chemical			Domestic/International Developments	
			1948	The Japan Chemical Industry Association was founded.
April	1953	Work manuals and work standards formulated.	1951	The Deming Prize was established.
November	1953	Third Deming Prize received.		The High Pressure Gas Control Law was enacted.
September	1955	Education and training committees established.	1967	The Basic Law for Environmental Pollution Control was enacted.
March	1961	R&D Committee and Chemical Industry Council established.	1968	The Air Pollution Control Law was enacted.
June	1961	Safety Council established.	1970	The Water Pollution Control Law was enacted.
October	1961	First safety audit carried out.	1971	The Law Concerning the Improvement of Pollution Prevention Systems in Specific Factories was enacted.
November	1966	Health and Hygiene Committee established.	1972	The Law on Industrial Safety and Hygiene was enacted.
November	1970	Environmental Control & Safety Department established.	1973	The Chemical Substances Control Law was enacted.
October	1971	Wastewater treatment facility completed at Isobe Plant.	1975	The Petroleum Kombinat, etc. Disaster Prevention Law was enacted.
March	1972	Large-scale hydrochloric acid recovery facility (by-product incinerator) completed at Kashima Vinyl Monomer plant. Fukui Environment Analysis Center established.	1988	The Montreal Protocol was promulgated.
November	1973	Control & Safety Countermeasures Department established.	1992	The UN Conference on Environment and Development (Earth Summit in Rio de Janeiro) was held.
February	1974	Environmental Control & Safety Departments in each plant placed under direct jurisdiction of plant general managers.	1993	The Environmental Basic Law was enacted. The Law Concerning the Rational Use of Energy was revised.
August	1975	Environmental Control & Safety Management Regulations and Emergency Response Regulations formulated.	1994	The United Nations Framework Convention on Climate Change took effect.
October	1989	CFC Control Countermeasures Committee established.	1995	The Law for Promotion, etc., of Sorted Collection and Recycling of Containers and Packaging was enacted.
May	1990	Global Environment Issues Countermeasures Committee established (by reorganizing the CFC Control Countermeasures Committee).	1996	The international standard for environmental management systems, ISO 14001, took effect.
March	1995	Participation in Responsible Care (RC) activities.	1997	The Waste Disposal and Public Cleaning Law was revised.
July	1996	ISO 14001 certification obtained for the Gunma Complex.	1998	The Law Concerning the Protection of the Measures to Cope with Global Warming was enacted.
August	1998	Environmental Charter adopted.	1999	PRTR (Pollutant Release and Transfer Registers) legislation was enacted. The Law Concerning Special Measures against Dioxins was enacted.
November	1998	First Environmental Report published.	2001	The Circulated Type Social Formation Organic Act Law took effect.
November	1999	Companywide hearing on environmental issues.	2002	Provisions of the 2002 Soil Contamination Countermeasures Law
March	2000	ISO 14001 certification obtained for all production plants in Japan.		World Summit on Sustainable Development (Earth Summit in Johannesburg) was held.
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 Awards for Superior HP Gas Production Facility,		
July	2002	Naoetsu Plant wins Thirty Year Special Achievement Award from the Japan Soda Industry Association.		

>>> Corporate Profile

Date of Establishment: September 16, 1926
 Capital: ¥110,260 million (US\$829 million)
 Consolidated Net Sales: ¥775,097 million (US\$5,828 million)
 Consolidated Net Income: ¥68,519 million (US\$515 million)
 Number of Employees: 2,755 (16,456 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
 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			
Isobe	7/1/1996	JCQA-E-002	Japan Chemical QA
Matsuida	7/1/1996	JCQA-E-002	Japan Chemical QA
Gobara	7/1/1996	JCQA-E-002	Japan Chemical QA
Silicones-Electronics Materials Research Center	7/1/1996	JCQA-E-002	Japan Chemical QA
Advanced Functional Materials Research Center	7/1/1996	JCQA-E-002	Japan Chemical QA
Takefu	12/25/1998	JQA-EM0298	Japan Quality Certifying Organization
Naoetsu	5/31/1999	JCQA-E-0064	Japan Chemical QA
Kashima	3/21/2000	JCQA-E-0126	Japan Chemical QA
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.H.E. Europe	1/26/1999	E00053	NQA
S.H.E. Taiwan	8/24/1999	T992009	LLOYD'S
S.H.E. Shah Alam	9/20/1999	S034301099	SIRIM
Shin-Etsu Engineering	3/21/2000	JCQA-E-0126	Japan Chemical QA
Nisshin Chemical Industry	4/24/2000	JCQA-E-0137	Japan Chemical QA
Shin-Etsu Quartz Products			
Takefu	1/5/2000	35154	ABS-QE
Koriyama	6/14/2000	35155	ABS-QE
Naoetsu Precision	10/23/2000	JCQA-E-0187	Japan Chemical QA
JAPAN VAM&POVAL CO., LTD. (formerly of Shin-Etsu Vinyl Acetate)	3/26/2001	JCQA-E-0246	Japan Chemical QA

Note:
 Details of environmental protection programs at Shin-Etsu Polymer Co., Ltd. are found in that company's environmental report.

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