

# Shin-Etsu Polymer Sustainability Report 2008

### Profile

Shin-Etsu Polymer Co., Ltd. was founded in 1960 as a wholly owned subsidiary of Shin-Etsu Chemical Co., Ltd. As a manufacturer of refined plastics, we have since created many products for a broad range of applications, from electric and electronic equipment to construction materials. Currently, our lineup of highly competitive core products includes keypads for mobile phones and other mobile terminals, inter-connectors for device connections and 300mm wafer containers for transporting and carrying semiconductor wafers. Providing diverse products as well as sales and manufacturing capabilities through a global network, Shin-Etsu Polymer actively partners with leading corporations around the world.

#### 📕 Company Profile

Trade name: Established: Headquarters address: Plants:

Paid-in capital: Number of employees:

Consolidated subsidiaries:

Shin-Etsu Polymer Co., Ltd. September 15, 1960 3-5, Nihonbashi-Honcho 4-chome, Chuo-ku, Tokyo, Japan Tokyo Plant (Saitama Prefecture), Nanyo Plant (Yamaguchi Prefecture) and Kodama Plant (Saitama Prefecture) 11,635,950,000 yen 6,496 (Consolidated), 640 (Non-consolidated) (As of March 31, 2008) 16 Shinano Polymer Co., Ltd. Urawa Polymer Co., Ltd. Niigata Polymer Co., Ltd. Shin-Etsu Finetech Co., Ltd. Shin-Etsu Unit Co., Ltd. San-Ace Co., Ltd. Suzhou Shin-Etsu Polymer Co., Ltd. Shin-Etsu Polymer Shanghai Co., Ltd. Shin-Etsu Polymer Hong Kong Co., Ltd. Shin-Etsu Polymer Singapore Pte. Ltd. Shin-Etsu Polymer (Malaysia) Sdn. Bhd. P.T. Shin-Etsu Polymer Indonesia Shin-Etsu Polymer America, Inc. Shin-Etsu Polymer México, S.A. de C.V. Shin-Etsu Polymer Europe B.V. Shin-Etsu Polymer Hungary Kft.

Non-consolidated subsidiary: 1

Shin-Etsu Polymer India Pvt. Ltd.

### For use

#### Editing Policies

Ever since the publication of the first Environmental Report in 2001, we have reported the status of our environmental conservation activities to stakeholders on seven occasions. From the 2005 edition, we renamed the document "Environmental and Social Report," intending to make it a sustainability report. The editing policies for the 2008 edition are

as follows:

- The document is edited, conforming to "Environmental Reporting Guideline (2007 edition)" of the Ministry of the Environment. Furthermore, the Guideline Comparison Table is used for clearly identifying satisfactory and unsatisfactory points of our efforts.
- In Fiscal Year 2008, we promoted initiatives for strengthening internal control by, for example, establishing "Shin-Etsu Polymer group Code of conduct" and the "Ethics Code." These initiatives are covered in this document.
- 3 The "Transition in Major Environmental Indexes" has been newly added to sum

up the major indexes in the past five years in an easy-to-understand manner.

- The document is intended to cover all the situations of our environmental activities and to be useful for in-field audit regarding customers' product environments.
- S As a part of Episodes, we chose Shin-Etsu Polymer Hungary Kft. as an example of overseas activities. We shall continue to introduce overseas subsidiaries in future editions.
- Professor Yoshinao Kozuma of the Economics Department, Sophia University, provides his third-party comment to contribute to our future initiatives.

#### Period

This report essentially covers the period between April 2007 and March 2008.

#### Publication

September 2008 (Next edition scheduled to be issued in September 2009)

#### Organizations subject to this report

Domestic production plants Overseas production plants Domestic offices (non-production sites)

#### Areas subject to this report

This document reports on the fields of environmental conservation and social activities. For our business outline, please refer to our Corporate Brochure.

#### Contact

Administration and Public Relations Group Shin-Etsu Polymer Co., Ltd. 3-5, Nihonbashi-Honcho 4-chome, Chuo-ku, Tokyo 103-0023, Japan TEL: +(81)-3-3279-1712 FAX: +(81)-3-3246-2529 Website: http://www.shinpoly.co.jp/

# Making efforts to create a company is trusted while paying attention to



Hiroshi Akagawa President

1. Akagawa

September 2008

A total of 16 countries including the eight major nations, China and India gathered together at the Hokkaido Toyako Summit that took place in July 2008 and adopted the Leaders Declaration that "We support a shared vision for long-term cooperative action, including a long-term global goal for emission reductions."

In response to these trends to establish an international framework for the post-Kyoto Protocol, Japan is trying to enact "the Basic Law for Establishing the Recycling-based Society," setting up targets of reducing global warming gases by 2050.

Furthermore, in Japan, though the first period of commitment of the Kyoto Protocol began in January 2008, achieving the targets is difficult, and the government has requested business to review voluntary action plans, and the four organizations of electric and electronic companies we belong to have raised the target from a "25% reduction against that of the reference year (1990)" to a "35% reduction," forcing us to take challenging actions.

Paying attention to such international trends in the global environment, our company complies with domestic and overseas laws and regulations and responds to them by taking appropriate measures.

On the other hand, there seems to be no end to corporate scandals shaking "fairness," an important factor of the social foundation, and these scandals have been criticized by society. Considering that compliance with

# whose every employee global trends

social rules and that an assumption of social responsibility must be absolute conditions for corporate survival, we are determined to make further efforts to win the trust of stakeholders by establishing an internal control system for the entire Group and to have thorough compliance.

#### **Cost Half Plan**

In order to maintain sustainable growth, we are making efforts to build a corporate strength to boldly respond to any changes in the business environment. The goal of the "Cost Half Plan" promoted since fiscal 2003 is to establish such a strength, and the Green Activities driven for its realization has greatly contributed to the elimination of waste, improvement of efficiency and strengthening of our competitive edge, along with the Six-Sigma and TPS initiatives

#### The Green Activities

We position Green Activities as "an effort to improve productivity from the viewpoint of the environment," and ever since its start in fiscal 2000, we have achieved substantial results, driven by global environment conservation and improvements in productivity.

In the Second Mid-term Plan (fiscal 2006-2008) of Green Activities, we achieved the energy-saving target of a "25% reduction of  $CO_2$  emission per basic unit of energy when compared with that of the reference year or fiscal 1994," one year earlier than planned and we anticipate to achieve a waste reduction

target of an "emission rate of 1% or less" in fiscal 2008.

We will set higher targets and steadily implement them in the Third Mid-term Plan (fiscal 2009-2011.)

#### Initiatives for customer's green and CSR procurement

Our Group has established a system for the management of chemicals contained in products at each production site in response to customer's green procurement requirements and created the "Global Environmental Communication System" to centrally control the entire Group, including overseas sites.

We also apply the above mentioned Global Environmental Communication System to customer's CSR procurement surveys that began in fiscal 2007 or a questionnaire on human rights and labor; occupational safety and health; environment; fair trade and ethics; quality and safety; information security; social contribution, etc.

To assure compliance with the European REACH Regulation that were enforced in June 2007, Environmental Management Representatives from headquarters collaborate with divisions and subsidiaries in Europe.

#### Product development in consideration of the environment

Recognizing that new product development is an absolute requirement for corporate growth, the Group has a cross-functional development structure throughout the company in order to develop new products in domains beyond the framework of divisions. The core of such activities is the R&D Center that addresses the development themes, with the progress of these themes reported to top management in "Development Meetings." In the past few years, we have created such new environmental and society friendly products as the "Shin-Etsu Lightframe" and "SEPLEGYDA," and we anticipate further new product developments in the future

# 2008 Environmental and Social Report

The Report this year conforms to the "Environmental Reporting Guideline: Towards a Sustainable Society (Fiscal Year 2007 Version)" of the Ministry of the Environment and reports on the initiatives of the "triple bottom line" (environment, economics and society.)

We received third-party comments from Mr. Komuro of the Tomatsu Environmental Quality Research Institute for the third year running and from Professor Kozuma of Sophia University, whom Mr. Komuro introduced to us and take advantage of them for our future efforts and initiatives.

By contributing to the development of society through providing high quality products, technologies and services and by carrying out this growth with a balance of economic, environmental and social aspects, we positively participate in the formation of a society toward sustainable development.

## Management Philosophy/Basic Environmental Principles

#### **Corporate Action Policy**

Unlimited challenges and growth! We work to become a company full of creativity and vitality by realizing hopes and visions toward the future.

- We serve as a strong and reliable partner with companies challenging to grow in their markets through innovative products and services.
- 2 We always consider and make proposals from the viewpoint of our customers and globally provide products and services that contribute to their value creation and growth.
- We assume our corporate responsibilities toward shareholders, customers, employees, communities and the global environment.

#### Basic Environmental Principles

#### [Basic Policy]

Shin-Etsu Polymer group recognizes that the work for environmental conservation is the one of most priority issues for our operation. So that we are working hard to become a part of building recycling economic society through our responsibilities required.

#### [Action Policy]

We are rebuilding the organization and systems to work for efficient and continuous environmental activities.



We observe law and regulations for resource conservation, energy saving, waste reduction, recycling and the proper handling of environmentally harmful substances. In addition, we set challenging goals and try to achieve it within our own manner in technical and economic resources.

We evaluate the environmental impacts of all phases from purchase and production through usage and disposal during the new products development stage and thus reduce it's environmental impact.

We provide internal education programs to have all employees understanding of basic environmental policies and the awareness of it.

We disclose the information of our environmental activities and make efforts to coexist with the community.

#### Shin-Etsu Polymer group Code of conduct

We have a pride and awareness as employees of Shin-Etsu Polymer Co., Ltd. and its Group companies and do our best to become a company trusted by society by always maintaining a law-abiding spirit, complying with laws, regulations, internal codes and rules and conducting fair and highly transparent corporate activities.

- 2 We disclose a comprehensive range of corporate information where necessary and appropriate and promote communication with society as well as stockholders, investors, customers and communities as an "open company."
- We respect the histories, cultures, customs, etc. of individual countries and regions, work at developing business based on mutual trust, and make efforts to coexist with communities.

- We recognize global environmental preservation as one of our firstpriority challenges and, by fulfilling social responsibilities required, actively participate in the establishment of recyclingoriented economic society aiming for sustainable development.
- Through business activities, we try to develop and manufacture environmentally friendly products with high performance, contribute to an affluent society and preservation of the environment. Furthermore, we implement green procurement, properly control chemical substances and comply with regulations on substances contained in products.
- **b** We commit ourselves to meet the requirements of customers and consumers and make efforts to provide attractive, safe and quality products and services that are highly satisfactory. Furthermore, we carefully handle personal information associated with customer's privacy and strictly control such information so that no information leakage or illegal use should occur.
- 7 We respect the principle of free competition and always promote fair trade. We also build transparent, fair and healthy relations with customers and consumers.
- We respect human rights, personality and diversity of employees, realize fair treatment and establish a working environment where they can exert their abilities, skills and vitality. We comply with occupational laws and regulations and conduct no inhumane labor practice such as child or forced labor.
- **9** We maintain healthy and normal relations with governments and their administrations
- 10 We confront antisocial groups and organizations that threaten social order and security with a resolute attitude.

# Achieving less than 1% emissions through a thorough sorting of waste!

~Zero emission activities at the Tokyo Plant~

In April 2006, the Tokyo Plant launched the "Zero Emission Study Committee" and addresses zero emission activities throughout the plant including headquarter departments and partner companies based on the conventional "Waste Reduction Project." The goal of the activity is to eliminate simple incineration and landfill as much as possible through the recycling of waste.

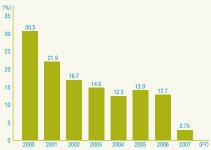
In this activity, we started the recycling of general waste in addition to the expansion of waste plastic recycling. The Tokyo Plant has promoted zero emission activities mainly through (1) in-plant reuse of waste, (2) sales to intermediate processing companies, (3) applications of cement for material and fuel and thermal recycling, and (4) collection by suppliers. An example of the first approach, in-plant reuse, is the recycling of empty bags and containers.

For the second measure of selling waste, we expanded the range by choosing a partner company that handles LCS products, PC/ABC sheets and other complex waste plastics in addition to the existing recycling companies of vinyl chloride scrap we have dealt with in the past. The partner recycles plastic waste into palettes at their plant.

In the third approach, the application of cement for material and fuel and thermal recycling, we carry out cement kiln treatment of silicone rubber waste, while non-vinyl chloride waste plastics are used as fuel or fuel for power generation at papermaking companies and copper refining factories.



#### Transition of annual emission rates



In relation to the fourth, collection by suppliers, we started to return such items that were conventionally incinerated such as coffee beans, tea leaves, paper cups, and food containers used in the canteen.

General waste that was incinerated at the local government's incineration plant (Saitama City East Environment Center) were conventionally evaluated as simple incineration, but having learned that waste incineration heat is used for power generation and hot water generation, we changed its evaluation as thermal recycling in fiscal 2008.

What we especially focused upon in this activity is the sorting of general waste. In the beginning there was a low level of awareness about sorting, so we posted "zero emission posters" in various places around the plant for enlightenment. We also started collecting all sortable waste such as paper cups, instant noodle cups, disposable lunchboxes and toilet paper tubes, and consequently, we have been able to reduce general waste commissioned for the government's incineration plant by 38% in two years.

In the second half of fiscal 2007 (October to March) we were able to achieve an emission rate of 1.6% and plan to achieve an emission rate of less than 1%, leaving used reagents (special control substances) and sludge from the canteen (landfill). We are determined to work as one to maintain the Tokyo Plant as a "zero emission plant."

Clerical Group Tokyo Plant Shin-Etsu Polymer Co., Ltd. Ichiro Utsugi





Leader Kurihashi Facilities Team Facilities Group Production Department Urawa Polymer Co., Ltd. **Hiroshi Kuno** 

Urawa Polymer Co., Ltd, a key site for the carrier tape business enjoys a global share of 10%, and has set up mid-term targets for energy-saving (1st term: fiscal 2003-2005; 2nd term: fiscal 2006-2008) and conducted a comprehensive range of activities.

As a result of promoting improvements, in particular focusing on air compressors that have the largest amount of power consumption at the plant (38%,) the company was able to achieve a 19.9% reduction against the first midterm target of 11% of the basic unit of power and reduced power consumption by 21.3% in fiscal 2007.

The first measure taken was the installation of two tanks to stabilize air pressure that are necessary for molding, aspiration and hole inspection (a process to check for the presence of holes in products.) Due to this, we were able to reduce the number of compressors from the conventionally required number of seven to six, and we also enabled an operation system to control the number of compressors to run as necessary.

Annual transition





# Drastically reducing power consumption with improved air compressors

~Energy saving and CO<sub>2</sub> emission reduction activities at Urawa Polymer Co., Ltd.~

Next, we upgraded obsolete air compressors with inverter-type compressors. An inverter air compressor can control motor rotation by linearly changing the frequency between 10% and 110% against the load, and because of this, reduce power consumption.

Furthermore, as an improvement on the air user's side, we installed a solenoid valve on air piping to the embossment inspection equipment. As a result air is only fed at the time of inspection to avoid using extra air, reducing the total amount of air consumed.

This solenoid valve turns on and off at a high speed (once a second,) so if it has a short

life, there is a possibility of malfunction. We therefore requested the manufacturer to satisfy our required specifications to enable long-life and stable inspection.

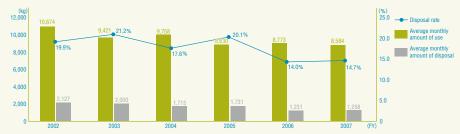
In addition, we have taken such measures to reduce in-plant power consumption such as (1) upgrading lamp type 3-color indicators to display molding (blue), completion (flashing yellow) and stop (red) mounted on all the molding machines and winders with LED type ones; (2) replacing some fluorescent lamps in plant, canteen, meeting rooms, etc. with "slim" lamps (84W); and replacing blinds in all windows with shading curtains.

# Reducing silicone rubber disposal rate through making the manufacturing processes "visible"

~Industrial waste reduction activities at the Nagano Plant, Shinano Polymer Co., Ltd.~

The Nagano Plant of Shinano Polymer Co., Ltd. has manufactured silicone rubber tubes, balloon catheters, O-rings and other silicone rubber medical products (medical parts) ever since its foundation in January 1983. The number of product types subject to production at this plant is about 1,100, engaged in typical small-lot production of a wide variety of products.

The Nagano Plant set up a project to reduce the amount of disposed silicone rubber material. When we reviewed the extrusion process of tubes that account for approximately 85% of silicone rubber used, it turned out that the major situations where disposal occurred were in the order of (1) start loss (43%), (2) screen mesh replacement loss (20%), (3) thickness deviation adjustment loss (12%) and (4) dimensional error Annual transition of disposal rate of silicone rubber



(8.3%) so we focused on reducing the screen mesh replacement loss.

At first we tackled making the manufacturing processes "visible" or observed and monitored: (1) external diameters of tube products; (2) resin temperature and pressure of the crosshead and cylinder (barrel) of extruders; (3) screw rotation, electric current and cooling water temperature; (4) distance from the take-off unit and take-off speed.

The screen mesh before the breaker plate becomes clogged due to material gelation (solidification) and thus requires replacement several times a day. To prevent this gelation, we checked the flow of the screw cooling water and the barrel cooling status. Furthermore, by ventilating the lower part of the crosshead by fan, hot air rising from the HAV (hot air vulcanizer) is shut off to prevent temperature rises around the head. Consequently, we were able to reduce the number of daily replacements of the screen mesh from five to one or two. With regard to results from other initiatives, the silicone rubber disposal rate in fiscal 2007 was 14.7% or a reduction of 5.2 points when compared with 19.9% in fiscal 2004.

Going forward, we shall continue to improve the rate of extruded tubes that pass inspection and remove causes of defects found in a wide range of products by other formulas (press molding, rubber-jection, LIMS,

etc.) to reduce waste and promote energy saving.

Operations Group Nagano Plant Shinano Polymer Co., Ltd. **Shinji Tanaka** 





Manager Quality Control Group Electronics Material Handling Products Division High Technology Products Business Unit

## Makoto Kojima

Niigata Polymer Co., Ltd. mainly manufactures 300mm FOSB (Front Opening Shipping Box) products used when silicone wafers are shipped to semiconductor device manufacturers and acquired ISO9001 certification a decade ago, meeting customer's quality requirements. In order to meet a level of requirements in the semiconductor industry in the future, however, additional tools other than ISO9001 are now necessary. That is PCS (Process Control System.) In other words, PCS is what the semiconductor industry is requesting us to use.

The Electronics Material Handling Products Division and Niigata Polymer Co., Ltd. introduced PCS in December 2005. PCS was proposed by Intel, the largest American semiconductor manufacturer and is a system to control production processes by taking advantage of such tools as (1) SPC (Statistical Process Control) charts, (2) FMEA (Failure Mode and Effects Analysis), (3) QC flowchart and (4) XRB (review board) and consequently



# Introducing PCS (Process Control System) to minimize defects

~Quality improvement activities at Niigata Polymer Co., Ltd.~

isoae

secures a constant level of quality for each shipment.

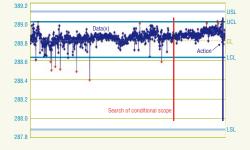
The main reason we introduced PCS was a dimensional issue that occurred at an end user in the summer of 2005. As the requirement was a "must," there was no in-house resistance against the introduction of PCS, and the Division and Niigata Polymer Co., Ltd. worked together to introduce the system. After the introduction of PCS, dimensional defects were completely eliminated, and it put a stop to the occurrence of defects.

We think the completeness of the current PCS at Niigata Polymer Co., Ltd. is approximately

60%. In order to further develop the system, the Quality Management Group orchestrates activities and launched two subcommittees on document management and SPC.

Customers may request audits for just SPC, and the system has quickly attracted attention. We plan to further brush up on the system. In addition, we conduct a semiannual CS measurement (customer questionnaire) to promote quality improvement. Also from this year, we host a "regular technological meeting on quality" to listen to customer's requirements, reflect them upon quality and offer high quality products to the market.

#### SPC (Statistical Process Control) chart



Establishing an easy-to-work and fulfilling workplace

~Production and social contribution activities of Shin-Etsu Polymer Hungary Kft.~

Episode



Shin-Etsu Polymer Hungary Kft. Managing Director Peter Lamberts

#### Producing keypads with multilingual support as our strength

Shin-Etsu Polymer Hungary Kft. ("SH") is a production subsidiary jointly established by Shin-Etsu Polymer Europe B.V. ("SE") and Shin-Etsu Polymer Co., Ltd. in October 2003. SE was established in Amsterdam, in 1986 as the first sales base in Europe and started to sell keypads for remote control units for TV receivers, VCR's, etc. In 1988, the company built its own plant in VenIo in Holland to commence the manufacture of keypads and inter connectors, but in the summer of 2007, the company transferred its production division fully to SH, and SE is currently engaged in sales to European customers, technical service, manufacturing of prototypes and distribution support. SH has a plant in the Ipari Industrial Park in Györ in western Hungary. The company built the plant in the city of Györ because, for example, (1) the city is close to the Komarom Plant of its main customer, Company N, and thus lead-time

can be shortened; (2) the city is nearly in the center of middle and eastern European markets while production bases of European companies are moving toward eastern Europe; (3) the city provides convenient logistics; and (4) the city is rich in excellent human resources and labor force.

The main products of SH are a line of keypads for cellular phones and automobile use. 70% of languages used in cellular phones in Europe are Latin-based/related, and the remaining 30% are other languages (including Arabic, Farsi, Greek, and Russian,) requiring the company to support about 20 languages. Equipped with laser markers, coating machines, screen-printing machines and automatic inspection systems, SH responds to customer's needs by taking advantage of its multilingual support.

#### Everyone participates in 1% donation activities.

In Hungary, there is a system called, the "1% Law," which allows individual taxpayers to direct

- Republic of Hungary • Population : 10.07 million persons
- Area : 93,030km (1/4 of Japan)
- Capital : Budapest
- People : Hungarian • Official language : Hungarian
- Religion : Catholic, Protestant
   GDP per capita : US\$13,560 (IMF, 2007)
- Major industries : Machinery, chemical/pharmaceutical, agricultural and livestock
- Source : The Japan External Trade Organization (JETRO), The World 2007



Shin-Etsu Polymer Hungary Kft. • Address : Berkeyefasor 2/A, H-9027 Györ, Hungary • Tel: +36-96-887-100

• Fax: +36-96-887-110



Participated in a sports event, celebrating the 15th



#### Gvör

ulation : 128,265人 (As of January 2008) Major cell phone makers, automobile manufacturers, etc. have production bases in the area

# environment

1% of their personal income tax to non-profit organizations they designate in support of their activities. There are about 10,000 organizations subject to this "1% Law," including a wide range of organizations such as the Hungarian Red-Cross, the National Cancer Institute, the Culture Promotion Foundation, the Sports Promotion Foundation and the Ronald McDonald House Charities. This system was introduced to Hungary in 1996, but the current rate of use is just 37 to 38% of all taxpayers. The reason behind this seems to be that recognition of the system is not wide enough and the complicated procedure. Through Human Resources, SH introduced this system to all staff and operators, and they all accepted the system as "a good idea," and everyone takes advantage of it. The company promotes its use by preparing a standard format and completing the paperwork on behalf of employees. Though it is an opportunity that can only be used once a year, it serves as a good opportunity to raise the spirit of charity. This "1% Law" has also been introduced to neighboring

countries, including Slovakia, Lithuania, Poland and Romania.

#### Toward enhanced education, welfare and benefits

Human resource development at SH consisted of two policies: (1) giving opportunities to inexperienced young staff, and (2) offering opportunities for professional education to strengthen skills. For the newly employed, the company offers educational opportunities with external educational institutions in three fields of language education, programming and logistics, increasing the motivation of the younger employees. The company also addresses improving welfare and benefits. As the number of employees who own automobiles is small, SH provide them with monthly city bus tickets. Furthermore, the company provides them with meal coupons to be used at in-house canteens and coupons that can be used at supermarkets. The employees of SH also promote friendship outside the office. Recently, they participated

in the 15th anniversary of Ipari Park, enjoying sports and quiz games. Four years ago, the Shin-Etsu Team first participated in the Dragon Boat Race held at the confluence of the Small Danube and Raab Rivers in the suburb of Györ, and the team participated in the race twice in the past, achieving good results.

The Shin-Etsu Polymer Group has been drastically globalized when compared with the situation of two decades ago, and the level of contribution by local employees at plants in different countries has increased more and more. In the future, it is desirable to educate local employees even further and entrust the management of the plant to them. With the motto of the "Best of Both Worlds!" the company wants to promote localization by integrating the advantages of Japan with those of individual countries and develop a better company. And SH hopes to be a driving force of this movement.



The Shin-Etsu team making strenuous efforts in the Dragon Boat Race

#### Green Activities

In order to address global environment conservation, our Group has been promoting the Green Activities since fiscal 2000. We hold bimonthly Energy-saving and Recycling Subcommittees across all plants in Japan and address such initiatives as reducing  $CO_2$  emissions, zero emission and a reduction of chemical substances use subject to PRTR.

#### **Basic Policy**

We recognize the Green Activities as those of productivity improvement from the viewpoint of the environment and have been promoting them as deeply rooted corporate activities.

#### The 2nd Mid-term Targets of the Green Activities (fiscal 2006 to fiscal 2008)

Based on the results and review of the 1st Mid-term Targets (fiscal 2003 to fiscal 2005) we set up the 2nd Mid-term Targets toward fiscal 2008 to promote environmental conservation activities.

#### 1 Mid-term Targets for Energy-saving

We will achieve a 25% reduction of produced CO<sub>2</sub> emission units (against that of the reference year 1994) by fiscal 2008. Each plant will reduce its energy consumption when compared with actual units of fiscal 2005 by 7.5%.

#### 2 Mid-term Targets for Waste Reduction and Recycling

We will achieve zero emission (less than 1% emission rate) by fiscal 2008. Emission rate = (amount of land fill + simple incineration)/total amount of waste

#### **Complete Summary of 2nd Mid-term Targets**

#### Energy-saving Mid-term Targets

- (1) Produced CO<sub>2</sub> emission units in fiscal 2007 was 854kg-CO<sub>2</sub>, reduced to 66.3% from that of fiscal 1994, and we were able to achieve a reduction of 8.8 points more than our mid-term target of a "25% reduction against the reference year." The factors contributing to this result in fiscal 2007 include, (i) drastic increase in production at domestic sites and (ii) relatively low production of products that consume a large amount of energy.
- (2) The basic unit of energy consumption in fiscal 2007 was 390.4litres/million yen, representing a reduction to 85.2% against that of fiscal 2005, with the reduction rate drastically higher than the "7.5% reduction when compared with actual results in fiscal 2005" of the mid-term target.

#### Waste reduction and recycling

At each site, initiatives to eliminate landfill of industrial waste have been in progress, and the landfill rate has dropped drastically from 24.4% in fiscal 2000 to 1.5%.

Furthermore, in relation to general waste that was previously categorized as simple incineration, taking into consideration the fact that clean centers in individual regions are effectively utilizing recovered heat, we redefined the category of general waste as thermal recycling and the simple incineration rate was reduced to 0.1%. Consequently, the emission rate reached 1.6%, and we are very close to achieving the 2nd mid-term target of less than 1%.

#### Chemical Management

Though not decided in the mid-term plan, activities for a reduction in PRTR substances used are going well, and in the data that has been accumulated since FY2001 we have achieved a 15% (1,088 tons) level reduction.

#### Improvement of environmental performance Energy-saving, Waste reduction and recycling, Chemical substance management. Management of chemicals contained in products Information disclosure Environmental and Social Report. Environmental accounting Environmental education Environmental quality lectures, Auditing of environmental quality of products. Corporate-wide presentations, Inhouse media Green Activities **Promotion Committee** Vice Chairman Director, Technology Group Director, Administration & Public Relations Group

Environmental and quality management system

IS014001, IS09001, IS0/TSI6949,

IS013485

Green

**Activities** 

Chairman President

#### Secretariat

Technology Group Environmental Control & Safety Group Administration & Public Relations Group

#### Energy-saving Subcommittee

#### **Recycling Subcommittee**

Plant and Business Sites Green Activities Subcommittee

Plants

Tokyo Plant, Nanyo Plant, Kodama Plant

#### **Production Subsidiaries**

Shinano Polymer Co., Ltd., Urawa Polymer Co., Ltd., Niigata Polymer Co., Ltd., SAN-ACE co., Ltd.

#### Head Office, Branch and Sales Offices

Head Office, Osaka Branch, Nagoya Branch, Fukuoka Branch, Sendai Sales Office, Chugoku Sales Office, Nagano Sales Office

#### Sales Subsidiaries

Shin-Etsu Finetech Co. 1 td Shin-Etsu Unit Co 1 td

#### **Overseas Subsidiaries**

Suzhou Shin-Etsu Polymer Co., Ltd. Shin-Etsu Polymer Shanghai Co., Ltd. Shin-Etsu Polymer Hong Kong Co., Ltd. Shin-Etsu Polymer Singapore Pte. Ltd. Shin-Etsu Polymer (Malaysia) Sdn. Bhd. P.T. Shin-Etsu Polymer Indonesia Shin-Etsu Polymer America, Inc. Shin-Etsu Polymer México, S.A. de C.V. Shin-Etsu Polymer Europe B.V. Shin-Etsu Polymer Hungary Kft. Shin-Etsu Polymer India Pvt. Ltd.

All domestic and overseas production sites of our Group have been awarded with the ISO9001 and the ISO14001 certification. In order to further enhance customer satisfaction, two divisions (RC and Electronic Devices Business Unit) were certified on a divisional basis.

#### Environment Management System

To promote ISO14001 across the organization, each general manager appoints an environmental management representative based on corporatewide environmental policies, and heads of departments serve as departmental environmental conservation representatives to promote environmental management. Environmental management implementation plans of individual departments are prepared on the basis of the environmental objectives and targets of all the sites set forth at the beginning of each fiscal year and approved after a review by the plant manager. The general manager reviews the progress and extent of accomplishment of the implementation plan through submissions of interim and final reports. Furthermore, an annual inspection by the Environmental Conservation Committee is held for an improvement and enhancement of environmental conservation.

#### Quality Management System

To promote ISO9001 across the organization, each general manager in

#### Organization of Environmental Management



#### Organization of Quality Management



the role of an executive manager sets forth quality policies and appoints a quality representative to establish and maintain the total quality management system. Each department builds and operates an operational system and by implementing PDCA cycles, improves the effectiveness of the system, quality of products and efficiency of operations. Each general manager reviews the progress of improvement through monthly reports, achievement review sessions and management reviews and provides the necessary instructions.

#### ISO/TS16949 Automobile Sector Quality System Standards

ISO/TS16949 is a standard comprising ISO9001 requirements and additional technical specifications (TS) unique to the automobile industry, and it is imperative for manufacturers of automobile parts and components to obtain this certification. In our Group, the Shiojiri and Hodaka Plants of Shinano Polymer Co. Ltd. as well as Shin-Etsu Polymer (Malaysia) Sdn. Bhd. have been certified with this certification, following Shin-Etsu Polymer Mexico, S.A. de C.V. and Suzhou Shin-Etsu Polymer Co., Ltd.

#### ISO13485 Medical Device Quality Management System

ISO13485 omits some ISO9001 requirements, and adds requirements unique to medical devices for the remaining ISO9001 requirements. In our Group, Shin-Etsu Polymer (Malaysia) Sdn. Bhd. as well as the Nagano and Miyabuchi Plants of Shinano Polymer Co., Ltd., manufacturing medical parts and components obtained the certification in fiscal 2007.

#### OHSAS18001 Occupational Health And Safety Management System

OHSAS18001 is a set of standards to screen out occupational safety and health risks for employees, planning and implementing countermeasures to reduce risks. In our Group, Suzhou Shin-Etsu Polymer Co. Ltd., the Kodama and Tokyo Plants were awarded the certification, conducting systematic and organized risk reduction activities, following Shinano Polymer Co., Ltd.

#### List of ISO14001 Certification

	Plants & Subsidiaries	Approval Date	Registration Number	Expiry Date	Authority	Applied Specification
Domestic	Tokyo Plant	2001.07.23 2007.07.23	JCQA-E-0270	2010.07.22	Japan Chemical Quality Assurance Ltd.	IS014001:2004
	Nanyo Plant	2001.02.26 2007.02.26	JCQA-E-0232	2010.02.25	Japan Chemical Quality Assurance Ltd.	IS014001:2004
tic Pla	Kodama Plant	1999.01.11 2008.01.11	JCQA-E-0040	2011.01.10	Japan Chemical Quality Assurance Ltd.	IS014001:2004
Plants &	Shinano Polymer Co., Ltd.	1999.04.05 2008.04.05	JCQA-E-0056	2011.04.04	Japan Chemical Quality Assurance Ltd.	IS014001:2004
Subs	Urawa Polymer Co., Ltd.	2001.11.26 2007.04.23	JCQA-E-0252	2010.04.22	Japan Chemical Quality Assurance Ltd.	IS014001:2004
Subsidiaries	Niigata Polymer Co., Ltd.	2001.11.26 2006.03.13	JCQA-E-0304	2011.11.25	Japan Chemical Quality Assurance Ltd.	IS014001:2004
Sa	Shin-Etsu Finetech Co., Ltd.	2005.08.01 2008.08.01	JCQA-E-0679	2011.07.31	Japan Chemical Quality Assurance Ltd.	IS014001:2004
Ove	Suzhou Shin-Etsu Polymer Co., Ltd.	2001.11.16 2006.09.14	00638/0	2009.09.14	OQS Certification and Evaluation Ltd.	IS014001:2004
Overseas	Shin-Etsu Polymer (Malaysia) Sdn.Bhd.	2004.01.30 2007.03.08	207067	2010.01.29	Bureau Veritas Certification Malaysia	IS014001:2004
Plants	PT.Shin-Etsu Polymer Indonesia	2002.01.12 2008.01.12	GB02/54090	2011.01.12	SGS United Kingdom Ltd. Systems & Services Certification	IS014001:2004
& Sut	Shin-Etsu Polymer México, S.A.de C.V.	2002.07.02 2008.07.01	A11098	2011.07.01	Underwriters Laboratories Inc	IS014001:2004
Subsidiaries	Shin-Etsu Polymer Europe B.V.	2001.06.12 2006.03.28	2363/7.1	2010.08.12	TÜV Nederland QA B.V.	IS014001:2004
ies	Shin-Etsu Polymer Hungary Kft.	2006.11.29	205859	2009.11.28	Bureau Veritas Certification Hungary	IS014001:2004

List of IS	SO9001 Certification (	Domestic Plan	ts & Subsidiar	ies)			
Plar	nts & Subsidiaries	Approval Date	Registration Number	Expiry Date	Authority	Range of Products and Services	Applied Specification
Tokvo Plant		1998.01.12	JCQA-0295	2010.01.11	Japan Chemical Quality	Development and manufacture of laminated sheet products, calendar sheet products, wrapping film and plastic switch products;	ISO 9001:2000
Tokyo Fiant		2007.01.12	00QA 0233	2010.01.11	Assurance Ltd.	manufacture of synthetic resin corrugated plates; manufacture and outsourcing management of synthetic resin compounds	100 3001.2000
Nanyo Plant		2000.03.13	JC0A-0662	2009.03.12	Japan Chemical Quality	Development, manufacture and order receipt of hard poly-vinyl chloride and related products; manufacture of hard poly-vinyl	ISO 9001:2000
Naliyu Fialit		2006.03.13	JUQA-0002	2009.03.12	Assurance Ltd.	chloride corrugated plotects, manufacture of hard poly-vinyr	150 9001:2000
Kodama Plant		1997.03.03	JCQA-0193 2009.03.02	Japan Chemical Quality Assurance Ltd.	Development and manufacture of silicone rubber roll products, blade products for OA equipment and silicone rubber products for	ISO 9001:2000	
		2006.03.03			medical industries		
RC Division, Electronic Devices Business Unit, Kodama Plant, RC Production		2003.06.23	JC0A-1277	2009.06.22	Japan Chemical Quality	Development, design and manufacture of rubber contacts and	ISO 9001:2000
Division	·· , · ···· ·	2006.06.23	EUGO.UG.LE	Assurance Ltd.	related products; procurement of related materials for subsidiaries	100 3001.2000	
Shinano	Head Office, Engineering Hotaka Plant, Shiojiri Plant	1996.12.25 2007.01.15	312564	2008.12.24	Bureau Veritas Japan Co., Ltd.	Manufacture of inter connectors and rubber contacts	ISO 9001:2000
Polymer Co., Ltd.	Nagano Plant, Mivabuchi Plant	1998.07.06	353905	2010.07.05	Bureau Veritas Japan Co., Ltd.	Manufacture of silicone rubber products for medical industries	ISO 9001:2000
Urawa Polyme	,	1997.03.03 2006.03.03	JCQA-0196	2009.03.02	Japan Chemical Quality Assurance Ltd.	1. Development and manufacturing of carrier tapes 2. Development and outsourcing management of cover tapes	ISO 9001:2000
	nce Rubber Products	1997.03.03	100 4 0100		Japan Chemical Quality	Development, manufacture, marketing and sales of injection	ISO 9001:2000
	Technology Products Niigata Polymer Co., Ltd.	2006.03.03	JCQA-0190	2009.03.02	Assurance Ltd.	molded wafer cases as well as parts and components for electronic equipment	
Shin-Etsu Finet	ach Co. Ltd	2002.07.29	JCQA-1131	2011.07.28	Japan Chemical Quality	Design, development, supply and sales of manufactured goods of various synthetic resins and rubber (polystyrene, poly-viny)	ISO 9001:2000
JIIII-LISU FIIICI	5011 UU., LIU.	2008.07.29	0004-1131	2011.07.20	Assurance Ltd.	chloride, silicone rubber, etc.)	130 3001.2000

#### List of ISO9001 Certification (Overseas Plants & Subsidiaries)

Plants & Subsidiaries	Approval Date	Registration Number	Expiry Date	Authority	Range of Products and Services	Applied Specification
Suzhou Shin-Etsu Polymer Co., Ltd.	1997.12.31 2006.09.14	04538/0	2009.09.14	OQS Certification and Evaluation Ltd.	Manufacture of silicone rubber products (including contacts, plastic keys, connectors and OA equipment)	ISO 9001:2000
Shin-Etsu Polymer (Malaysia) Sdn. Bhd.	1996.10.16	195725	2009.02.23	Bureau Veritas	Manufacture of plastic key-related products including silicone rubber contacts     (silicone elastomer switches) and silicone elastomer connectors for electric and electronic equipment     2. Manufacture and development of embossed carrier tapes for	ISO 9001:2000
	2006.07.12			Certification Malaysia	electric and electronic parts and components 3. Manufacture of silicone elastomer rolls for automation equipment 4. Manufacture of silicone rubber products for medical, electric and electronic industries and for seal packing materials	
P.T.Shin-Etsu Polymer Indonesia	2001.01.03 2007.01.11	ID04/0381	2010.01.02	SGS United Kingdom Ltd. System & Services Certification	Manufacture of injection molded wafer cases	ISO 9001:2000
Shin-Etsu Polymer México,S.A.de C.V.	2001.03.15 2008.01.28	A9031	2011.01.27	Underwriters Laboratories Inc.	Manufacture of silicone rubber keypads	ISO 9001:2000
Shin-Etsu Polymer Europe B.V.	1996.05.10 2008.07.29	2363/8.1	2011.07.22	TÜV Nederland QA B.V	Manufacture and sales of silicone rubber contacts, various keypads and inter connectors	ISO 9001:2000
Shin-Etsu Polymer Hungary Kft.	2005.11.16 2006.11.29	205859	2009.11.29	Bureau Veritas Certification Hungary	Manufacturing of keypads for electronic devices and associated operations	ISO 9001:2000

#### List of ISO/TS16949 Certification

Plants & Subsidiaries	Approval Date	Registration Number	Expiry Date	Authority	Range of Products and Services	Applied Specification	
Shinano Polymer Co., Ltd. Shiojiri Plant	2008.04.15	(IATF) 66569 (BVC) 222544/1	2011.04.14	Bureau Veritas Certification	Development, design and manufacture of inter connectors	ISO/TS16949:2002	
Shinano Polymer Co., Ltd. Hotaka Plant	2008.04.15	(IATF) 66572 (BVC) 222544/2	2011.04.14	Bureau Veritas Certification	Development, design and manufacture of rubber contacts	ISO/TS16949:2002	
Suzhou Shin-Etsu Polymer Co., Ltd.	2005.09.10	00176/0	2008.09.10	OQS Certification and Evaluation Ltd.	Manufacture of silicone rubber keys and rubber connectors for automobiles	ISO/TS16949:2002	
Shin-Etsu Polymer México, S.A.de C.V.	2005.03.07 2008.01.28	A9031	2011.01.27	Underwriters Laboratories Inc.	Manufacture of rubber contacts	ISO/TS16949:2002	
Shin-Etsu Polymer (Malaysia) Sdn. Bhd.	2008.08.16	(IATF) 71109 (BVC) MYS-233097	2011.08.15	Bureau Veritas Certification Malaysia	Manufacture of rubber contacts	ISO/TS16949:2002	

#### List of ISO13485 Certification

Plants & Subsidiaries	Approval Date	Registration Number	Expiry Date	Authority	Range of Certification	Applied Specification
Shinano Polymer Co., Ltd. (Nagano Plant and Miyabuchi Plant)	2007.08.22	DNKFRC218647A	2010.06.18	Bureau Veritas Certification	Manufacturing of silicone rubber products for medical equipment	IS013485:2003
Shin-Etsu Polymer (Malaysia) Sdn.Bhd.	2007.04.17	DNKFRC211985A	2010.04.17	Bureau Veritas Certification Malaysia	Manufacturing of silicone rubber products for medical use	ISO13485:2003

#### List of ISO/IEC17025 Certification

Plants & Subsidiaries	Approval Date	<b>Registration Number</b>	Expiry Date	Authority	Range of Certification	Applied Specification
Shin-Etsu Polymer Co., Ltd.	2001.04.11	RTL00870	2009.04.10	The Japan Accreditation Board for Conformity	Chemical tests Infrared spectroscopy of paint resin	JIS Q 17025:2000
(Chemical Analysis Center)	2007.03.22	111200070	2003.04.10	Assessment	Qualitative (JISK0117, JISK5551 Appendix 1)	(ISO/IEC17025:1999)

#### List of OHSAS18001 Certification

Plants & Subsidiaries	Approval Date	Registration Number	Expiry Date	Authority	Range of Occupational Health And Safety Management System	Applied Specification
Tokyo Plant	2008.04.21	JCQA-0-0057	2011.04.20	Japan Chemical Quality Assurance Ltd.	Engaged in development activities for new products of synthetic resin sheets, wrapping films, corrugated sheets, compounds and plastic electronic components	OHSAS18001:2007
Kodama Plant	2008.03.24	JCQA-0-0056	2011.03.23	Japan Chemical Quality Assurance Ltd.	Development and manufacture of silicone rubber as material used in OA equipment, medical and scientific industries and rubber connectors	OHSAS18001:2007
Shinano Polymer Co., Ltd.	2006.04.03	JCQA-0-0029	2009.04.02	Japan Chemical Quality Assurance Ltd.	Manufacture of rubber contacts; development and manufacture of inter connectors; manufacture of silicone rubber products for medical, scientific and chemical industries	OHSAS18001:1999
Suzhou Shin-Etsu Polymer Co., Ltd.	2007.11.16	00203/0	2010.11.15	OQS Certification and Evaluation Ltd.	Manufacture of silicone rubber products (keypad contact, plastic keys, connectors, including OA equipment)	OHSAS18001:1999

The R&D Center and individual business units of the Shin-Etsu Polymer Group are engaged in the development of products that cause low environmental burdens and contribute to society.

#### PRODUCTS-1

Keypads for automobile



2nd Sales Group RC Division Electronic Device Business Unit **Masaki Higuchi** 

Steering switch and RKE (Remote Keyless Entry)

Shin-Etsu Polymer Co., Ltd. provides rubber-made keypads for automobiles. Rubber switches are excellent for water proofing and load design flexibility, and have been adopted for switches of power windows, mirrors, etc. In recent years, the light weight and fitness of the design have been accepted by the market, expanding the range of applications. Our share of the inner type rubber-made electrical switches is number-one in the market, but we now focus on steering switches and RKE by taking advantage of our in-mold molding technology and know-how. The mass production of our RKE for overseas markets that began in 2007 is a switch



integrating the case and keypad. As new domestic market

segments, input sections of center consoles to control air conditioners, navigation systems and audio systems as well as "smart" keys to start engines. In order to meet the needs in the automobile industry where safety is emphasized and a high level of technology is required, we improve quality and promote efficient production.

#### PRODUCTS-2

#### Top cover tape



3rd Technology Group Technology Department Urawa Polymer Co., Ltd. **Shigenobu Hiraiwa** 

#### Antistatic grade, "SPY12"

Carrier tapes and top cover tapes are used as packing materials for transporting and mounting laminated ceramic capacitors and other chip components. Small chip components whose size is 1208 or less are subject to electrostatic damage, and top cover tape needs to be antistatic.

Antistatic grade, "SPY12," a new product released in 2006 by Shin-Etsu Polymer Co., Ltd. has an antistatic layer inside the tape and has many advantages when compared with conventional products that have antistatic layers on the surface of the tape: (1) antistatic agent does not attach to the chip components; (2) as seal strength is stable and lowtemperature sealing is possible, high-speed sealing is available when used at the

same temperature as that of conventional products; (3) as the seal bars do not become dirty, no cleaning of the taping tools is necessary (conventionally once an hour,) and (4) as no ambient humidity affects the tape, antistatic property is stable.

The appeal of the new product, "SPY12" lies in the fact that it enables taping at low temperatures (120 to  $160^{\circ}$ ) and at a speed twice as fast as conventional products (3,000 pieces/minute,) drastically improving taping productivity.

#### PRODUCTS-3

Interior decorating sheet/functional sheet



Sheet Product Group Plastic Sheets & Compound Division PVC Products Business Unit

#### Katsuhiko Wakabayashi

Mille-tin film

Mille-tin film is specially designed for insert molding. Highly sophisticated and cleanly designed film mirror-finished by our exclusive Laminate Calendar System (LCS) is processed into a three-dimensional shape and then integrated with ABS resin with insert molding. The Mille-tin decorating film was initially designed for automobiles and has been adopted by a North American automobile manufacturer as well as a flagship model of a Japanese carmaker. Compared with other decorating methods (painting, hydraulic pressure transferring, and in-mold,) the insert molding has such features as: (1) when compared with non-decorative painting, a range of design options including wood grain, metallic,

geometrical and 3D patterns are available; (2) volatile organic compound (VOC) emission is 1/10 of painting and 1/5 of hydraulic pressure transferring; (3) footprint is smaller than painting and hydraulic pressure transferring methods, and (4) different from the in-mold method, opening can be processed. In the future, we will expand applications to electric home apparatus and computers.

#### PRODUCTS-4



FP Group East Japan Division Shin-Etsu Finetech Co., Ltd. **Kazuo Kanbara** 

Cushioning material for shipping box packaging

#### Industrial tray (PP packing)

Silicone wafer is shipped, stored in a shipping box (5" to 8" wafer case; 300mm FOSB,) and cushioning material is fitted between the wafer and corrugated cardboard. Conventionally, wafer was sandwiched with styrene foam cushions, but as the height is high, it required more storage space and caused industrial waste issues. So, as a replacement, cushioning material made of molded and processed polypropylene (PP) sheet whose thickness is 1 to 1.5mm. We call it an "industrial tray." Around 1993, we had an inquiry from a customer and promoted development by utilizing the know-how on dies cultivated by Shin-Etsu Finetech Co., Ltd., design



assistance from the R&D Center of Shin-Etsu Polymer Co., Ltd. and mold processing technology

of a molding partner. Currently, the product supports shipments of large-sized 300mm FOSB (MW300G/ GT). PP packing for package cushioning is lightweight, has elasticity and can alleviate shocks when dropped. It is an eco-friendly packing material as it can also be stacked for smaller footprints and repeated use.

#### P R O D U C T S - 5

# Light guide for cellular phone keypads



Sales Development Group Connector Division Electronic Device Business Unit **Taku Wakasugi** 

#### Silicone rubber light guide

Conventionally, cellular phone keypads were lit by placing many light sources underneath, but a light guide method where a small number of LED light sources are deployed on the sides to light keypads has become more and more popular. Since 2003, Shin-Etsu Polymer Co., Ltd. has mass produced keypads integrating grid-shaped plastic light guides with silicone rubber, and this silicone light guide is designed thinner, and in September 2007, based on customer's inquiries, we started to mass produce it. The silicone rubber light guide forms dots based on optical design on the highly transparent silicone rubber sheet, and LED lights introduced from the sides of the rubber sheet are guided by

taking advantage of internal reflection of the highly transparent rubber so the lights can be distributed all over the sheet. This takes advantage of a feature of silicone rubber where light emittance is high and refractive index is low and also contributes to reduce power consumption by the smaller number of LED mounted.

Going forward, we plan to accumulate optical design know-how and offer highly value-added products to electric home apparatus, automobiles and lighting markets, in addition to the cellular phone market.

#### PRODUCTS-6

Resin-made tape frame and frame cassette

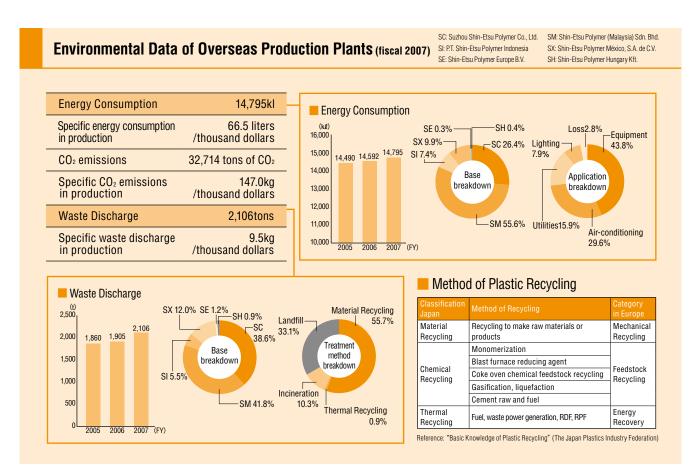


R&D Group R&D Center **Kiyofumi Tanaka** 

#### Shin-Etsu Light Frame & Shin-Etsu Light Cassette

A tape frame (Note: name used by SEMI; generally called a "ring frame") is a frame to fix dicing tapes in semiconductor manufacturing processes. Conventionally, the tape frame was mainly made from SUS (stainless used steel,) and frames for 6" to 8" were not standardized; however, in the case of 300mm, SUS frames have already been standardized by SEMI (Semiconductor Equipment and Materials International) and our product was established as per the SEMI standard in March 2008 regarding resinmade frames. (To be effective in November 2008.) SUS-made frames are carried in the aluminum cassette, but is heavy being a burden on workers, and at the time of putting in/taking out frames, foreign obstacles are generated due to aluminum cassette chipping and Cr plate peeling on the

SUS surface, lowering the reliability of the devices. In order to solve this issue, we developed a resinmade cassette molded from polycarbonate resin. A combination of resin-made frames and cassette offers 1/2 the weight of a combination of an SUS frame and aluminum cassette, and can reduce not only transportation costs but also CO<sub>2</sub> that is generated due to transportation. It also supports RF-ID tags for strengthening traceability. Energy consumption at overseas production plants (average of the past three years) was 14,600kl, equivalent to 87% of that of domestic production plants (16,800,) and waste discharge at overseas plants (average of the past three years) was 1,960t or 50% of the 3,950t discharged by domestic sites.



#### **Dialogue on the Environmental and Social Report**

We held an initial dialogue in the Group on "What is the shape of a better, fulfilling report?"

#### Moderator

#### (Mr. Nakamura, Manager, Technology Group):

In the early days, there was an issue that our Environment Report was not utilized and left untouched, while in recent years, awareness of it seems to be increasing. First of all, please tell us how you feel about this. Mr Nishimura

#### (Director, Shin-Etsu Finetech Co., Ltd.):

Our Environmental Report is carefully written in detail, and I feel it must have been difficult to compile it. At Finetech, we bring a copy with us when visiting customers and offer it as a giveaway. Furthermore, at the time of environmental auditing by a customer, it enables the customer to understand what activities we are engaged in. It is very useful. Moderator:

We want more customers, employees and stakeholders to read our Environmental and

Social report. How about you?

#### Mr. Wakashima

# (Manager, Administration & Public Relations Group):

We encourage salespersons of Divisions to bring a set of this Report and the Corporate Brochure when they visit customers. In order to be able to explain them to customers, salespersons must read them, too.

#### Mr. Kawamura (Director):

When you explain our company to a customer, which do you use, the Corporate Brochure or the Environmental and Social Report?

#### **Moderator:**

Though the objectives of publishing are different, the President of Shin-Etsu America said that the Environmental and Social Report was more effective for foreign people. It has been translated into English, and they make use of it.

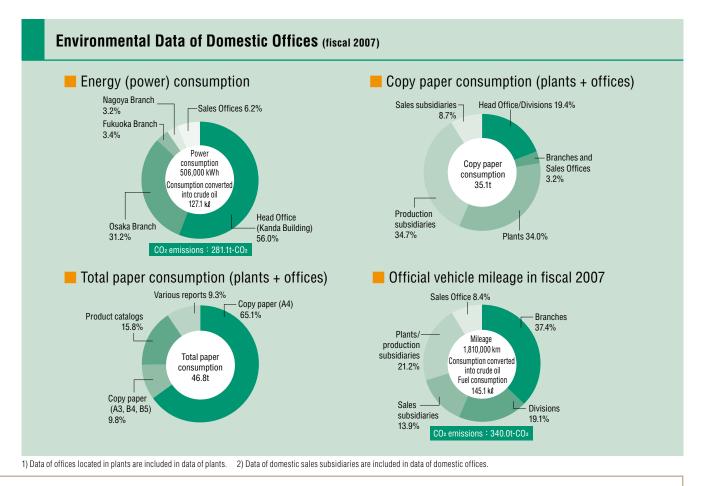
Mr. Sugita (Manager, Shin-Etsu Unit Co., Ltd.): Shin-Etsu Unit Co., Ltd. is engaged in the construction business, which is unique in the Group. In the Report, as the Unit has rarely been covered it is not widely used.

#### Mr. Katsumata (Shin-Etsu Finetech Co., Ltd.):

At Finetech, we ask external partners to produce custom products, but the Report does not have supplier-oriented pages. We sincerely hope you can offer pages that encourage suppliers to want to work with us after reading the Report.

#### Moderator:

We are a company with the motto, "Customer First," but needless to say we have to get along properly with suppliers. In the survey in the fiscal 2007 edition, there was a request that "the Report should be Shin-Etsu-like." How can this be done? For three consecutive years, our Group has collected environmental data of domestic offices. In February 2008, we established the "Office Subcommittee" and we shall promote activities with concrete action plans and numerical targets from fiscal 2008 and beyond.



#### Mr. Sugita:

If we add community activities in the pages of involvement with society, the Report will appear more "Shin-Etsu like." In other company reports, there is a mention of tree-planting, volunteer and other pleasant activities, but what about ours?

#### Mr. Wakashima:

As we are mainly engaged in beautification, cleaning and other unspectacular activities, it is difficult to cover volunteer activities and so forth. However, we are doing what should be done such as accepting local elementary school pupils and junior high school students from the local community, participating in local festivals and making donations. Moderator:

# Finally, please give us your opinion on the introduction of green products.

Mr. Hanaoka

(Office Manager, Nagano Sales Office): In the Report, I feel there are a lack of



articles on an in-depth introduction of products in terms of energy saving, CO<sub>2</sub> emission reduction and other economic-friendliness.

#### Mr. Katsumata:

At Finetech, we make efforts to promote sales of soluble laundry bags, runner clips, reusable reels and other environmentfriendly products. Miss Ishii

#### (Administration & Public Relations Group):

We have only asked Divisions about green products, but we need to expand the coverage to Group companies. Moderator:

#### We have been able to actively exchange

opinions today. We surely want to take advantage of them in editing our Environmental and Social Report. Finally, we would like to ask for a final comment from Mr. Kawamura.

#### Mr. Kawamura:

Today, we discussed how the Environmental and Social Report is used and about the contents, but it appears that for the former, there is a difference in the level of eagerness by business operations. It would be better if the secretariat made efforts to raise awareness of the Report by, for example, hosting a "session to read the Environmental and Social report." In order to meet the requirements for the management of chemicals contained in products by customers, we created the "Global Environmental Communication System" to centrally manage all the Group companies including overseas plants. We also apply this system to CSR procurement surveys by customers that started in fiscal 2008.

#### Global Environmental Communication System

(1) The "Environmental Management Representative" of our Group is appointed, and the Representative represents our Group with regard to customer's requirements in relation to the environmental quality of our products.
(2) The "Environmental General Manager" and the "Environmental Technical Supervisor" are appointed at each division, and respectively manage issues associated with the environmental quality of products of the division.

(3) Submissions of such documents as Green Procurement Survey Responses, Certificate of non-use of environmentrelated substances, Conformation Form of the Changes in Management or Analysis Data are conducted in accordance with the rules set forth in the Global Environmental Communication System.

(4) Material with low environmental burdens (raw material, parts/components,

packing material, etc.) are purchased from environment-friendly suppliers in accordance with "Green Procurement Guidelines" and "Control Standards of Chemical Substances Contained in Products."

(5) Part of this system is applied to customer's "CSR Procurement Survey (Supplier CSR Promotion Status Survey)" on human rights/labor, safety and welfare, environment, fair trade and ethics, quality and safety, information security and social contribution.



#### 📕 List of Plants & Subsidiaries approved by the Sony Green Partner Environmental Quality Approval Program

Partner Name	Corporate ID	Factory Name	Factory ID	Original Date of Factory ID Issuance	Current Validity Period	
		Tokyo Plant	7742	2005.06.30		
	410A	Kodama Plant	2586	2003.08.01		
Shin-Etsu Polymer Co., Ltd.		410A	Shinano Polymer Co., Ltd. (Shiojiri Plant)	2584	2003.08.01	2007.07~2009.06
		Urawa Polymer Co., Ltd. (Kurihashi Plant)	2585	2003.08.01		
		Niigata Polymer Co., Ltd.	7726	2005.11.17		
Shin-Etsu Finetech Co., Ltd.	-		6553	2007.09.21	2007.04~2009.06	

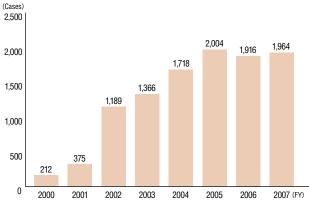
#### Environmental Quality Assurance Setup Audit Results by Customers (FY 2007)

Audit Date	Customer	Audited Plants & Subsidiaries
2007.06.15	Semiconductor Company, Matsushita Electric Industrial Co., Ltd.	Urawa Polymer Co., Ltd.
2007.06.18	PED Japan Hokkaido Co., Ltd.	Urawa Polymer Co., Ltd.
2007.07.05	Covalent Materials Corporation	Niigata Polymer Co., Ltd.
2007.09.20	PED Tsuyama Co., Ltd.	Shinano Polymer Co., Ltd. (Shiojiri Plant)
2007.09.28	Japan Aviation Electronics Industry, Limited	Shinano Polymer Co., Ltd. (Hodaka Plant)
2007.10.24	Japan Aviation Electronics Industry, Limited	Shin-Etsu Finetech Co., Ltd.
2007.11.15-16	Pioneer Communications Corporation	Shinano Polymer Co., Ltd. (Hodaka Plant)
2007.11.28	Mitsubishi Electric Home Appliance Co.	Kodama Plant
2007.12.13	Canon Marketing Japan Inc.	Shinano Polymer Co., Ltd. (Hodaka Plant)
2007.12.14	Canon Marketing Japan Inc.	Shinano Polymer Co., Ltd. (Shiojiri Plant)
2008.03.21	Nippon Chemi-Con Corporation	Urawa Polymer Co., Ltd.
2008.03.26	Nippon Chemi-Con Corporation	Shin-Etsu Finetech Co., Ltd.

#### CSR Setup Audit Results by Customers (FY 2007)

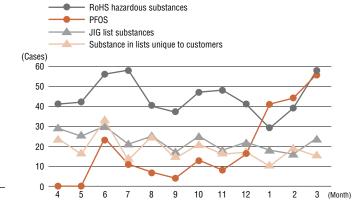
PED = Panasonic Electronic Devices

Response Date	Customer	Audit Name
2007.10.08	Fuji Xerox Co., Ltd.	Headquarters CSR Self-check List
2007.12.13	Sony Corporation	Headquarters "Supplier Code of Conduct" Compliance Condition Questionnaire
2008.01.07	Brother Technology (Shenzhen) Ltd.	CSR Approval Questionnaire
2008.03.04	Yamaha Corporation	CSR Check Sheet
2008.03.04	Sharp Corporation	CSR Implementation Check Sheet
2008.03.30	Dai Nippon Printing Co., Ltd.	"CSR Approval Benchmark" Compliance Condition Questionnaire
2008.03.18	Sony Device Technology (Thailand) Co., Ltd.	Business "Supplier Code of Conduct" Compliance Condition Questionnaire



#### Annual transition of green procurement surveys

Monthly transition by content (fiscal 2007)



Documentation

Shin-Etsu Polymer Group "Control Standards of Chemical Substances Contained in Products"

- We set the permissible density (threshold level) of Cd, Pb, Hg, Hexavalent Cr, PBB and PBDE as shown in Table 1. Our control value is based on the strictest values set forth by domestic customers in the electric/electronic industry.
- 2. We guarantee that there is no intentional use of any "Level A chemical substances" in products supplied to customers

	Permissi	ble density	At our Chemical Analysis Center,
Substance	Thresholds of RoHS Directive	Our control values	analysis method (quantitative lower limit)
Cd	100ppm	5ppm	ICP-AES (5ppm)
Pb	1,000ppm	100ppm	ICP-AES (10ppm)
Hg	1,000ppm	100ppm	AAS (5ppm)
Hexavalent Cr	1,000ppm	100ppm	Diphenylcarbazide Absorptiometry (2ppm)
PBB	1,000ppm	100ppm	XRF (30ppm) or GC-MS
PBDE	1,000ppm	100ppm	(detected or not detected)

Table 1 Control values of RoHS hazardous	s materials
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ICP-AES : Inductively Coupled Plasma Atomic Emission Spectrometry AAS : Atomic Absorption Spectrometry

XRF: X-ray Fluorescence Spectrometry

Table 3:	Level B chemical subst	ances (JIG, Appendix B)
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Materials/chemical substances	Threshold level	
Sb/Sb compounds	1,000ppm	
As/As compounds	1,000ppm	
Be/Be compounds	1,000ppm	
Bi/Bi compounds	1,000ppm	
Bromate flame retardant (excluding PBBs and PBDEs)	1,000ppm	
Some Phthalic Esters	1,000ppm	
Ni (for specific use only)	Amount of exfoliation 0.5ug/cm <sup>2</sup> /week	
Se/Se Compounds	1,000ppm	

JGPSSI : Japan Green Procurement Survey Standardization Initiative

EIA : Electronic Industries Association

EICTA : European Information & Communications Technology Industry Association

and that their percentage content as impurities is less than the threshold level shown in Table 2. We also guarantee that the percentage content of any "Level B chemical substances" in products is less than the threshold value shown in Table 3.

Table 2: Level A chemical substances (	JIG,	Appendix A	)
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Materials/chemical substances	Threshold leve	
Asbestos	Reporting required if contained, regardless of amount	
Some of azo dye/pigments	Intentional addition	
Cd/Cd compounds	<ul><li>(1) Intentional addition,</li><li>(2) 100ppm (homogeneous medium)</li></ul>	
Hexavalent Cr compounds	(1) Intentional addition, (2) 1,000ppm (homogeneous medium)	
Pb/Pb compounds	<ul><li>(1) Intentional addition,</li><li>(2) 1,000ppm (homogeneous medium)</li></ul>	
Hg/Hg compounds	<ul><li>(1) Intentional addition,</li><li>(2) 1,000ppm (homogeneous medium)</li></ul>	
Ozone layer depleting substances	Reporting required if contained, regardless of amount	
PBBs (Polychlorinated Biphenyls)	<ul><li>(1) Intentional addition,</li><li>(2) 1,000ppm (homogeneous medium)</li></ul>	
PBDEs (Polybrominated diphenyl ether)	<ul><li>(1) Intentional addition,</li><li>(2) 1,000ppm (homogeneous medium)</li></ul>	
PCBs (Polychlorinated Biphenils) PCTs (Polychlorinated terphenyl)	Intentional addition	
Polychlorinated naphthalenes (limited to those containing three or more chlorine atoms)	Intentional addition	
Radioactive materials	Intentional addition	
Some short—chain paraffin chloride (C10-C13)	(1) Intentional addition, (2) 1,000ppm (homogeneous medium)	
Some TBTs (Tributyl tin) TPTs (Triphenyl tin)	Intentional addition	
TBTOs (Tributyl tin Chloride)	Intentional addition	

JIG (Joint Industry Guideline) is a "guideline for disclosure of information on chemicals contained in electric/electronic products" jointly published by JGPSSI, EIA and EICTA.

We received third-party comments to further improve the environmental and social activities of our Group.

#### Third-party comments on the "2008 Environmental and Social Report"

n relation to the environmental, social efforts and initiatives of the Shin-Etsu Polymer Group, I am providing my comments after reading the same Group's "Environmental and Social Report" ("Report") and after conducting a hearing survey of those concerned.

The first thing I want to point out is that continuous improvements in information disclosure that reflects the opinions and requests of stakeholders can be seen. The Shin-Etsu Polymer Group has carried thirdparty comments since the Report in 2005, and have always been accompanied by comments from relevant officers, attempting to handle disclosure with a conscious effort for mutual communication. Furthermore, what is pointed out in the Report of the previous year is corrected in the following year's Report one way or another.

This policy continues this year, too. The comments made by Mr. Masamitsu Komuro, from the Tomatsu Environmental Quality Research Institute was subject to improvement this year, and improvement activities for disclosure have also began with regard to employment and other quantitative social information.

In addition, other attempts to increase transparency by external evaluations are visible. One of them is a reader's questionnaire. Results of the reader's questionnaire from the previous year's Report are compiled, with key comments and requests published, accompanied by the company's commitment and results of measures taken. Furthermore, for those items that take time to handle, future policies and explanations are given as Editor's comments, clearly indicating the attitude to continuously improve transparency. This year again, contrivances and efforts for improvement can be found throughout the Report as illustrated by, for example, coverage of reader's requests in the questionnaire as part of Episode; the addition of an explanation in detail regarding the worsened labor accident frequency rate and energy-saving results; incorporation of activity cases at overseas plants into the disclosure plan; employment of graphs to show year-by-year changes in environmental data of overseas plants; and early introduction of the list of major indexes, etc. I hope that such positive disclosure policies will be maintained in the future. In terms of initiatives, strengthened governance attracted my attention. Until last year, the Corporate Action Policy and Basic Environmental Principles constituted the framework of basic ideas, but as the Corporate Code of Conduct and Code of Ethics have been established, concrete policies have also been strengthened. In terms of organization, the governance organization has been enhanced as seen with the Total Risk Compliance Committee that was upgraded and reorganized to the Total Risk Management Committee as well as more careful measures to strengthen information security taken.

With regard to supply chain management that is expected to increase in importance, the Global Environment Communication System



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has already started to function, and it is desirable to effectively take advantage of this as a management tool for upstream (suppliers) in terms of environmental and social issues. In relation to future improvement targets, we can think of organization and systemization of governance-related principles and policies that have been improved, enhancement of quantitative social information, and an expansion in the range of organizations to be included in the material flow, and I hope that these are considered in planning future improvement plans.



Director Assistant Chairman, Green Activities Promotion Bureau

Yutaka Kawamura

#### In response to third-party comments

Thanks to the kind introduction by Mr. Komuro from the Tomatsu Environmental Quality Research Institute, Professor Kozuma, a specialist in environmental and CSR reports, gave us his thirdparty comments for the first time. With regard to "organization and systemization of governance-related principles" and an "enhancement of quantitative social information" that Professor Kozuma pointed out, we will improve our efforts and initiatives concerning CSR (Corporate Social Responsibility) based on our "Corporate Code of Conduct" that was established this year. In relation to what was pointed out about supply chain management, in order to satisfy customer's requirements for "supply chain CSR," it goes without saying that we must communicate this to our suppliers and work together with them to put this into practice.

Continuous improvement of the Environmental and Social Report means improvement and advancement of our Group's environmental conservation and social activities. We are determined to make further efforts toward the future.