



Sustainability Report 2021

Shin-Etsu Chemical Co., Ltd.

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— Addressing Climate Change and Respect for Human Rights

Many of our products are materials that are rarely seen in the form of finished products, but they are essential to a variety of end products and production processes, supporting the foundations of people's daily life and industries. Not a few of these products occupy a large share of the market. We have placed ESG¹ initiatives at the core of our business activities, aiming to reduce our environmental impact and contribute to the realization of a sustainable society.

In May 2019, we expressed our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)² and joined the TCFD Consortium³ in its efforts to address climate change, which is currently an urgent global issue. Lately, major countries have set goals for reduction in greenhouse gas emissions and begun to move forward to achieving carbon neutrality. Our business is all aligned to help reduce greenhouse gas emissions. We will commit to further align our business toward this goal. It is imperative to maximize efficiency throughout the economies in this day and age when humans pursue sustainable growth and prosperity while lessening burden on environments. We believe that we can play a key role to that end. We will develop our product offerings with that focus and make a contribution in such a manner that the more our products are used, the better the industries and human societies become. We are determined to do our part as an essential supplier to human life and industries in the world.

The Group has conducted its businesses at its sites around the world always on the basis of respecting human rights of all individuals. In May 2019, we established "The Shin-Etsu Group Human Rights Policy" to codify our approach to management based on the respect for human rights, and we have thoroughly made it known to all Group companies. We are also currently conducting human rights due diligence⁴. As we move ahead, we will continue to adhere to the relevant international codes of conduct⁵ and promote activities for the respect for human rights among Group companies worldwide.

— Contributing to the SDGs

Every single goal of the SDGs⁶ is an issue that we, the people living in the 21st century, have the responsibility to address. We keep "contributing to the SDGs" as one of the guiding principles in our management objectives for FY2021. We always bear the resolutions of SDGs issues in mind in our daily operations, as well as when we make capital investments, develop new products and promote new businesses. Our core business of polyvinyl chloride resin contributes to the development of social infrastructure, and our semiconductor silicon wafers support the advanced information society. Silicone resins are used for a wide range of products that contribute to addressing the issues of the SDGs. New products, such as micro LED materials, lithium-ion battery performance enhancers, and heterogeneous semiconductor substrates, will accelerate the commercial production and development of 5G-related products.

Of our capital investment projects in FY2020, 98.6% contributed to the SDGs. Providing our products contributes to the achievement of the SDGs, and at the same time, the SDGs expand our business opportunities.

— Approaches to fair corporate activities, environment, and safety

Since 2010, the Group has been a member of the UN Global Compact and has carried out initiatives to put into practice its 10 principles that cover four main areas: human rights, labor standards, environment and anti-corruption. In February 2018, we signed on, as the first company to do so, to the Tokyo Principles for Strengthening Anti-Corruption Practices established by the Global Compact Network Japan⁷. Our signing on to the Tokyo Principles is compatible with our stated intention to “comply with all laws and regulations, and conduct fair business practices” indicated in our Business Principle. It also contributes to the achievement of the Goal 16 of the SDGs: “Peace, justice, and strong institutions.” We will incorporate the Tokyo Principles into our daily operations by sharing them throughout the Group and maintaining the anti-corruption norm as a key element in our corporate activities. Further, in accordance with Responsible Care^{®8} Global Charter, the Group is continuously striving to ensure environmental conservation and to improve occupational safety and health as well as process safety and prevention. In FY 2020, a total of 12 business sites, in Japan and abroad, conducted their business activities in compliance with the Charter through such means as carrying out online audits of environmental and safety management.

— Human Resource Development

At all of our production sites, we continue to operate at a high level, giving top priority to safety and quality. We are proud of our employees, who all share a strong sense of purpose and are committed to their work. The ability to get things done and the enthusiasm of our colleagues will bring success to our company. With this in mind, we have clearly stated “Promote workplace conducive to job satisfaction” in the guideline “Conduct legally compliant and equitable corporate activities” listed in our management objectives. By enhancing the employee experience, we foster a culture where everyone is respected and valued, and has an equal opportunity to contribute. We invest in our employees through managerial interactions, various training programs including AI training, and diverse career development and learning opportunities.

As above, I have introduced our basic ideas and some aspects of the ESG activities that we are engaged in. These activities are explained in greater detail in each chapter of this Report. I would appreciate it if you could refer to them.

The mission of the Group lies in providing products that are appreciated for having improved the quality of life and solved social issues. As the number of such products increases, the Group believes that its contribution to the development of human society and reduction of the environmental impact will also increase. Our goal is “Shin-Etsu Everywhere.” By ensuring that our products play a role in every place, in every industry, and in every end product, we will strive, along with society, to achieve sustainable growth. We would greatly appreciate your continued understanding and support as we move ahead.

June 2021
Yasuhiko Saitoh, President,

¹ ESG

An element of CSR defined by investors and others to evaluate a company's CSR efforts. E is environmental (Environment), S is social (Social), and G is governance (Governance).

² TCFD (Task Force on Climate-related Financial Disclosures)

This task force deals with the disclosure of information on climate change, and was established in September 2015 by the FSB (Financial Stability Board). The FSB is an international organization that monitors the state of international finance and plans measures and regulations to govern it. In December 2017, the TCFD announced its recommendation that companies should analyze their own risks and opportunities based on multiple medium and long-term climate change scenarios (varied future climate scenarios with a rise in temperature of 2°C or less), and to disclose information regarding the degree to which finances will be affected.

³ TCFD Consortium of Japan

This group was established in May 2019, led by the Japanese Ministry of Economy, Trade and Industry, the Financial Services Agency, and the Ministry of the Environment. Companies, financial institutions and other organizations that are in agreement with the TCFD recommendations join forces in this consortium. All participating parties share the aim of promoting initiatives for disclosing corporate information effectively, as well as encouraging accurate decisions to be made based on this information in investments made by financial institutions and similar organizations.

⁴ Human rights due diligence

Measures to be implemented by corporations to identify, prevent and correct the adverse impacts on human rights. They include formulating policies on human rights, assessing the impacts of corporate activities on human rights, tracking of performances and disclosing information.

⁵ International codes of conduct

These include the Universal Declaration of Human Rights, the ILO international labor standards, the UN Guiding Principles on Business and Human Rights, as well as the Ten Principles of the United Nations Global Compact.

⁶ SDGs (Sustainable Development Goals)

International Goals for a Sustainable and Better World by 2030, as described in the 2030 Agenda for Sustainable Development adopted at the UN Summit in September 2015. It consists of 17 goals and 169 targets.

⁷ Global Compact Network Japan (GCNJ)

Global Compact Network Japan (GCNJ) is the local Global Compact network branch that has been set up to actively work as a CSR platform in Japan. It aims to disseminate the United Nations Global Compact's mission and various key principles to management levels within companies and organizations through such means as CSR education designed for people in management, organizing study groups with different themes as well as holding various symposia. As of March 2020, more than 350 Japanese companies/groups are participating in GCNJ.

⁸ Responsible Care®

Activities whereby each company that handles chemical materials on a voluntary basis commits itself to improving health, safety and environmental performance in all the life-cycle processes from the development of chemical materials through manufacture, distribution, usage, final consumption and disposal up to recycling, and then making public the results of its activities and continuously engaging in dialogue with the local community and the public, while striving to maintain good communication with society. The Group signed and put into practice the Responsible Care®3 Global Charter of the International Council of Chemical Associations (ICCA) in 2006. Furthermore, in 2014, we also signed the revised Responsible Care® Global Charter issued by the ICCA.

Editorial Policy

The Shin-Etsu Group started issuing the "Environmental Report" in 2000. In 2004, the report was renamed the "Environmental and Social Report" after expanding its contents to include corporate social responsibility in general, and in 2016, the report was retitled the "CSR Report" and has been issued without interruption. Furthermore, the Group has renamed "CSR Report" to "Sustainability Report" starting in 2019 since we have begun integrating SDGs into business management, expanding the scope of our business activities to realize a sustainable society.

The Report also serves as a report on our Responsible Care programs¹.

Referenced Guidelines

GRI Standards

Ministry of the Environment "Environmental Reporting Guidelines 2018"

Ministry of the Environment "Environmental Accounting Guidelines 2005 Edition"

Global Compact Ten Principles

UN International Bill of Rights (UDHR)

UN Guiding Principles on Business and Human Rights

[> GRI Standards Content Index](#) 

Period Covered by the Report (indicated where otherwise)

Japan: April 1, 2020 to March 31, 2021

Overseas: January 1, 2020 to December 31, 2020

Issue information

Issued: June 2021 (Previous issue: July 2020)

Next issue: scheduled for June 2022

Organizations Covered by the Report

The scope of the reporting organization was changed from Shin-Etsu Chemical and its group companies, including non-consolidated companies, to Shin-Etsu Chemical and 97 consolidated companies, retroactive to fiscal 2018. The range of entities from which data were collected is in principles as stated below. Where otherwise, this is indicated in a separate note.

① Environmental Activity Report

Shin-Etsu Chemical and consolidated companies (domestic:24, overseas:73)

② Environmental Accounting

Shin-Etsu Chemical

③ Other

Shin-Etsu Chemical and consolidated companies, except for the Shin-Etsu Polymer Group²

④ A collection of ESG data

Shin-Etsu Chemical and consolidated companies

— Membership

Keidanren (Japan Business Federation)
Japan Chemical Industry Association
Vinyl Environmental Council
Plastic Waste Management Institute
The International Friendship Exchange Council
The Japan Committee for UNICEF
Global Compact Network Japan
SDGs Promise Japan, etc.

¹ Responsible Care programs

A campaign encouraging enterprises that handle chemical substances to voluntarily ensure protection of the environment, health and safety in all processes, from the development of chemical substances through manufacture, distribution and utilization to final consumption, disposal or recycling, to publish the results of their activity, and to engage in dialogue and communication with society.

² For a report on the Shin-Etsu Polymer Group, see "Shin-Etsu Polymer Sustainability Report 2021" (to be published at the end of September 2021).



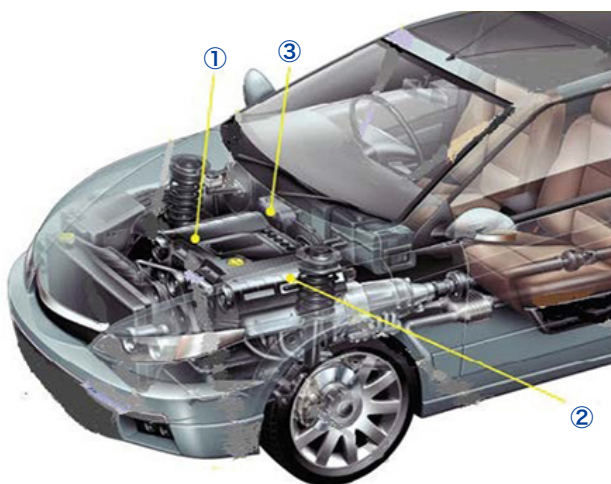
Eco-friendly cars and Shin-Etsu

With the environment

Comfortable living



Better Mobility - Better means of transportation Shin-Etsu Group's products support Eco-friendly cars



- (1) Drive motors and generators
(Neodymium magnets)
 - Smaller and lighter
 - Heat-resistant
 - Reduced overcurrent
- (2) Starters and generators
(Neodymium magnets)
 - High-powered
 - Heat-resistant
- (3) Power control units
(Silicon wafers, encapsulant materials, and thermal interface materials)
 - Smaller and lighter
 - High sealing performance
 - Heat-dissipating properties

The Company's neodymium magnets¹ are used in drive motors and generators, which are the most important core unit of eco-friendly electric vehicles (EVs) and hybrid vehicles (HVs). The Company's silicon wafers, sealing materials, and heat dissipation materials are also used in power control units for system control.

Compared to gasoline cars, HVs can reduce carbon dioxide emissions by about 40%, while EVs can reduce emissions by 100%.* In addition, the location of the factory incorporates a carbon-neutral perspective. Our manufacturing bases for neodymium magnets are located in Fukui Prefecture of Japan and Vietnam, and at the plant in Fukui prefecture, 34% of the purchased electricity is renewable energy, and at the plant in Vietnam, 47% is renewable energy. Both of which far exceed the average ratio in Japan.

The Company is promoting the stable supply of various products used in eco-friendly cars and the development of new products, and the shipment volume of such products is increasing year by year. The Company's products are making a significant contribution to reducing CO₂ emissions.

¹ Neodymium magnet

A type of rare earth magnet with very strong magnetic force, composed mainly of neodymium, iron, and boron. It contributes to the miniaturization and reduction of energy consumption of motors and other devices with its strong magnetic force.

* Source: "Contributing to Lower Emissions through the Global Value Chain" by Keidanren (Japan Business Federation)

■ Contributions of the Company's neodymium magnet to reducing CO₂ emissions due to its use in eco-friendly car

According to the results of our calculations, the use of our neodymium magnets in eco-friendly cars reduced CO₂ emissions by 280,000 tons in 2019. This will contribute to a reduction in CO₂ emissions of about 3 million tons over the next 10 years.¹

As a result of global carbon neutrality policies, the percentage of eco-friendly cars has risen rapidly, and the penetration rate of EVs worldwide is expected to reach 100% by 2050.² Demand for neodymium magnets for eco-friendly cars are expected to continue to grow. The Company will steadily respond to growing demand.

¹ Assuming that cars are used for an average of 10 years

² Source: "Energy Technology Perspective 2017" by IEA

■ Future issues and challenges

- Neodymium magnets: Promote a stable supply system by expanding production facilities and recycling technologies, and improve the performance of magnets while reducing their size and weight
- Silicon wafers: Stable supply of high-quality silicon wafers that support miniaturization and other requirements
- Encapsulant materials: High sealing performance and insulation properties
- Heat dissipation materials: High heat dissipation properties

— Our company's initiative

Shin-Etsu Group and SDGs



Shin-Etsu Group and Climate Change



Eco-friendly cars and
Shin-Etsu

With the environment

Comfortable living

Shin-Etsu Group's products contribute to the reduction of greenhouse gas emissions in various situations. We will continue to develop products that contribute to carbon neutrality.



Better Environment - More eco-friendly products

Shin-Etsu Group Products and Technologies that Contribute to Environmental Conservation

Various products of the Shin-Etsu Group contribute to reduction of greenhouse gas emissions, energy saving, and resource saving at the stage of use.

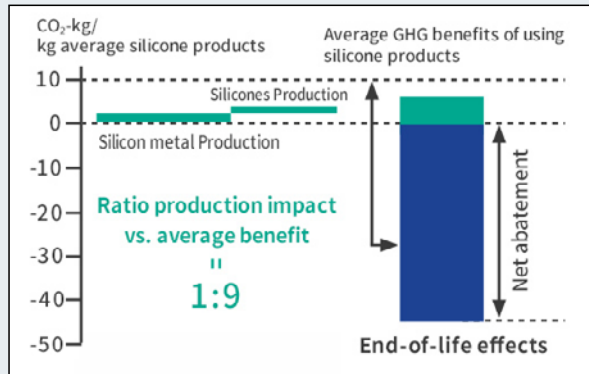
Silicones

The Group produces over 5,000 silicone products, such as household products, automobiles, construction, and solar cells. While being put to each of their uses, these products are contributing to reductions in greenhouse gas emissions.

We, together with other members of the global silicone industry, carried out a study of the entire silicone market, examining silicone greenhouse gas emissions at the phase of production and how much greenhouse gas emissions are curbed by the use of silicone, in comparison to silicone substitutes and alternative methods. The study found that the silicone used as a product has the effect of reducing emissions¹ by 9 times that of greenhouse gases emitted during the manufacturing and disposal of silicones. This is equivalent to a reduction of 54 million CO₂-tons of greenhouse gases² annually.

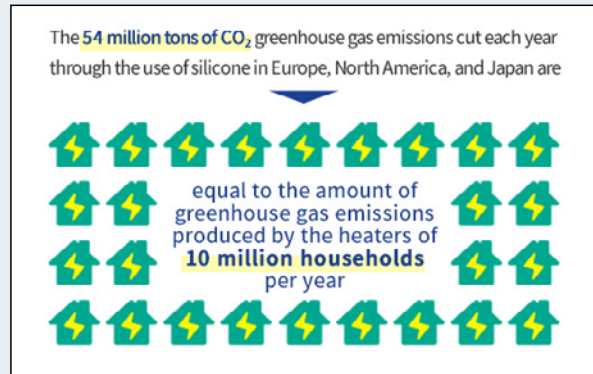
Silicone used in automobiles, construction, and solar cells account for the greatest share of overall silicone greenhouse gas emissions reductions. Silicone is contributing significantly to the improvement of sustainability.

1 Greenhouse Gas Emission Reduction Effects



※2012 survey results

2 Examples of Greenhouse Gas Emission Reductions

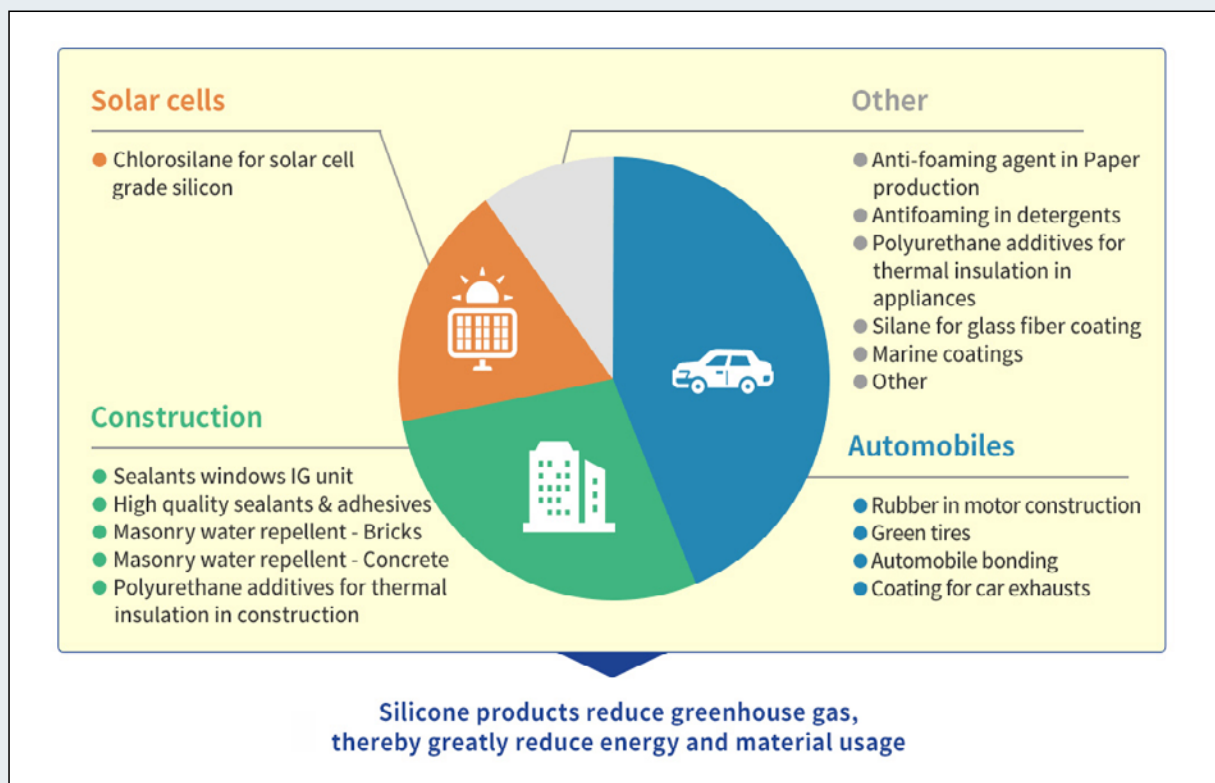


Source: Silicone Industry Association of Japan "Silicone-Chemistry Carbon Balance"

> [Global Silicones Council](#)

> [Silicone Industry Association of Japan](#)

Fields in Which Silicone Use is Reducing Greenhouse Gas Emissions, and Major Silicone Uses



Polyvinyl Chloride

Approximately 60% of the raw materials used in PVC are salts, which are abundant throughout the world. Compared to other general-purpose resins, the benefits of PVC include a low dependence on petroleum resources, placing a relatively small burden on the environment. The process of manufacturing PVC from raw materials uses around 60% of the energy required to make other general-purpose resins. Highly durable and easy to recycle, PVC is used for a wide range of social infrastructure materials, including vinyl windows, water and sewerage pipes, public works and other construction.

PVC windows have superior insulation properties, and are resistant to fogging, making them mainstays in Europe and North America. Their use is also accelerating in China. In Japan, as well, they are popular in mainly cold regions. Compared to ductile cast-iron pipes¹, PVC pipes have lower total carbon-dioxide emissions² over their lifecycles, contributing to the prevention of global warming.

¹ Ductile cast-iron pipe

Tubes produced by spheroidal graphite cast iron, in which the precipitated graphite shape in the cast iron structure was changed from flaky to spheroidal. Has more than twice the strength and high toughness of the flaky graphite cast iron.

² Lifecycle carbon-dioxide emissions

Total carbon dioxide emissions for a product, from the gathering of raw materials, through the production, use, disposal, and recycling stages.

Source: Japan Chemical Industry Association "Lifecycle Analysis of Chemical Products in Japan and around the World", third edition Vinyl Environmental Council website "Living with PVC Windows"

Japan Chemical Industry Association

Vinyl Environmental Council

[> Japan Chemical Industry Association](#)

[> Vinyl Environmental Council](#)

Rare Earth Magnets

Rare-earth magnets are roughly 10 times as strong as conventional ferrite magnets, offering a great deal of magnetic force despite their compact size. These properties allow them to contribute to making motors for hybrid and electric vehicles, energy saving air conditioning compressor motors, and the like more compact, lightweight, and high powered.

For example, using rare-earth magnets in air conditioning compressors can improve energy efficiency by 5 to 10%. This cuts overall power usage, helping to reduce carbon-dioxide emissions. Rare-earth magnets are also used in wind power generation motors, contributing to the spread of renewable energy.

[> Shin-Etsu rare-earth magnets](#)

— Our company's initiative

[Shin-Etsu Group and SDGs](#)



[Shin-Etsu Group and Climate Change](#)



Eco-friendly cars and
Shin-Etsu

With the environment

Comfortable living

The products of the Shin-Etsu Group, such as cellulose derivatives used in fields of pharmaceuticals and foods or synthetic pheromones used to control pests, contribute to solving our health and food problems.



Better Life - More comfortable living

Binder for plant-based meat alternatives "Metolose MCE-100TS"



Meat alternatives made from protein-rich soybeans and peas have come into practical use. It is attracting attention of not only for people who are vegan and health conscious and actively eating vegetable foods, but also as a food that contributes to solving food shortages and environmental problems due to population growth.

The Company has developed "Metolose MCE 100TS", which is one of the products of cellulose derivatives, with a view of using it as a binder for plant based meat alternatives. This makes it possible to create a similar texture to real meat, which cannot be achieved with soy or other raw materials alone.

Our binder has already been adopted by a major hamburger chain. The global market for plant-based meat is expected to grow at a double-digit rate annually, and further market expansion is expected.

Interview with the staff in charge in the Metolose MCE-100TS

1. Please tell us about your job.

Mr. KH and Ms. CA: We are in charge of the domestic sales of cellulose products in the food field. We also handle cellulose used in the fields of construction materials, ceramics, cosmetics, and chemical industry.

Mr. HH: I am in charge of the overseas sales of cellulose for food applications, including sales for SE Tylose, a subsidiary that produces and sells cellulose derivatives in Germany.



Mr. HH

2. Please tell us what inspired you to develop Metolose MCE-100TS.

Mr. HH: We received inquiries from overseas customers about product functionality, and our technical sales representatives and laboratory personnel collaborated and developed this product.

An aqueous solution of Metolose will turn into gel when heated to a certain temperature, and revert back to solution when cooled. We thought that if we could lower the temperature at which the gel turns into solution and maintain its gelatinous state at room temperature, we might be able to expand its use in food as a substitute for egg whites, which is used as a binder.

3. Were there any difficulties or anything that you put extra effort into in developing Metolose MCE-100TS?

Mr. KH: Europe and North America have taken the lead in the technology for plant-based meat. In order to spread plant-based meat in Japan, it is necessary to provide foods that Japanese people like, which suits the dietary habits of Japanese people. We are working to create a new Japanese food culture, so even food manufacturers are still groping to develop such products.

We need to solve various problems, in order to propose a new product like Metolose MCE-100TS to such food manufacturers. We had a hard time to reach the quality that our customers demanded, because we had to take into consideration various factors: the food must taste good; we must be able to adjust a production line to fit for it, and the food must be sold at a fair market price.



Mr. KH

It was a new product development, so there were times when customers were cautious about taking the plunge. We work with our customers to find out how they can utilize their existing equipment without making major improvements in order to commercialize the products.

Mr. HH: In overseas markets, we have explained our products features to each customer to make them understand. Starting with the functional evaluation of the product at the customer's research laboratory, we carry out prototyping, actual equipment testing, and stability evaluation in sequence, so we need to work closely with customers. At each stage of evaluation, we need to provide observations and technical advice as appropriate to meet the quality requirements of the customer.



Ms. CA

4. What did you think of the actual taste of the plant-based meat added with Metolose MCE-100TS?

Ms. CA: It was very delicious. I think it is good that it has low calories compared to real meat, so it is healthy. With such a remarkable improvement in quality, I see a great potential for future demand for plant-based meat. This product can satisfy the various preferences of consumers because its texture and flavor vary greatly depending on the ingredients used and how they are formulated.

5. Please let us know if there is anything else you would like to add to promote the product.

Mr. HH, Mr. KH, Ms. CA: Metolose is a material that makes it possible to do what was previously considered impossible in the food industry. We will continue to strive to expand sales worldwide, with the catchphrase "a material that makes your wish come true."

— Our company's initiative

Shin-Etsu Group and SDGs



Shin-Etsu Group and Climate Change



The Shin-Etsu Group is working to reduce greenhouse gas emissions in the course of its business activities in order to contribute to the globally targeted goal of "2050 Carbon Neutral."

— Features of the Shin-Etsu Group's products

1) Products that are less dependent on petroleum

One of the Shin-Etsu Group's main products, PVC, uses naturally derived salt as 60% of its raw material, while semiconductor silicon and silicone mainly use silicon (28% by mass ratio), which is the second most abundant element on earth after oxygen. PVC, semiconductor silicon, and silicone resins are all widely used in various fields of application that contribute to the reduction of greenhouse gas emissions. The Group maximizes the materials production efficiency to provide society with products that contribute to the global environment.

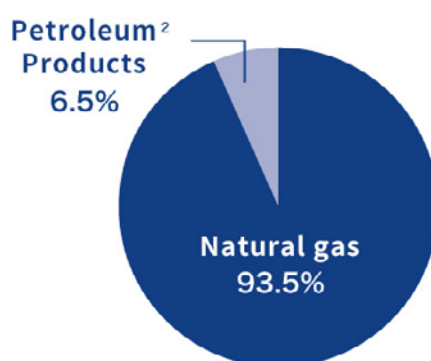
2) Manufacturing that thoroughly pursues energy conservation

The Group has been thoroughly addressing the challenges of energy conservation, and has significantly reduced energy consumption intensity (49.8% for Shin-Etsu Chemical on a non-consolidated basis and 53.6% for the entire Group in comparison to the 1990 level). This reduction far exceeds the target of a 1% annual reduction in energy use intensity under the Japan's Act on the Rational Use of Energy (Energy Saving Act). We will continue to promote thorough energy conservation to achieve our goal of make greenhouse gas emissions intensity to 45% of the 1990 level by 2025.

In addition, 93.5% of the Group's scope 1's energy sources are natural gas, and we do not use coal, which has high greenhouse gas emissions. The rest of the energy is derived from petroleum, with liquefied petroleum gas accounting for 4.6% and heavy oil, diesel oil, and gasoline accounting for 2% in total.

Furthermore, Shintech Inc. in the U.S., which has the world's largest PVC production capacity, produces a part of ethylene, the main raw material for PVC, on its own. The ethylene produced by Shintech is made from ethane, which is derived from natural gas with low greenhouse gas emissions.

Ratio of scope 1's energy sources in the Group¹



¹ : Comparison of each energy source on a crude oil equivalent basis

² : The breakdown of petroleum products is as follows: liquefied petroleum gas 4.6%, kerosene, light oil and gasoline 1.1%, heavy oil A and C 0.9%

3) Products that contribute to the reduction of greenhouse gas emissions

The Group has a wide range of products that contribute to the reduction of greenhouse gas emissions. We will continue to focus on the development, manufacture, and supply of products that contribute to the reduction of greenhouse gas emissions while accurately understanding the needs of our customers and society.

* For more details, please refer to the following "Strategies for addressing climate change 2) Through development, production and supply of environment-contributing products, contributing to the efficiency of customers' production processes, expecting to spread throughout society."

4) Low-carbon products and highly recyclable products

Compared to petrochemical products³, our main products are characterized by their low carbon content (e.g., the carbon content of PVC is approximately 40%, and the carbon content of siloxane, which forms the backbone of silicone products, is approximately 30%). In other words, the Group's products are less dependent on carbon. Therefore, a characteristic is that when the product is incinerated and disposed of after use, it emits less greenhouse gases than other petrochemical products.

In addition, the material recycling ratio of PVC in Japan is over 30%, achieving a high level among plastics. Furthermore, the Group is also engaged in the recycling of rare earth, the raw material for rare earth magnets. As such, the Group is committed to the effective use and recycling of valuable resources.

> Sustainability - Key ESG Issues - Energy-saving, resource-saving and reduction of the environmental impact - Conserving Resources

³Carbon content of typical petrochemical products: Ethylene, propylene, butylene 86% each, benzene 92%, toluene, xylene 91% each

— Structure of dealing with climate change

The ESG Promotion Committee is working with each of the Group's business divisions to address climate change. The ESG Promotion Committee is one of the committees for each material management task in the Group's corporate governance system. Chaired by the president, the committee consists of about 50 members, including directors, corporate officers and divisional managers of Shin-Etsu Chemical, as well as persons in charge of ESG at Group companies, and promotes initiatives that integrate business and ESG activities.

> Sustainability Management - ESG Promotion Structure

The ESG Promotion Committee held subcommittee meetings on climate change 12 times in FY2020. In addition, the Managing Directors' Meeting, which is responsible for reviewing and passing resolutions on business execution, reported on the Group's climate change initiatives, which were approved after discussion.

— Strategies for addressing climate change

The Group aims to realize the sustainable development of human society and the improvement of its quality while reducing the environmental burden. Maximizing efficiency leads to the effective use of limited resources. Specific initiatives are as follows.

Strategies
1) Reduction of greenhouse gas emissions through thorough improvements in production efficiency
2) Through development, production and supply of environment-contributing products, contributing to the efficiency of customers' production processes, expecting to spread throughout society
3) Utilization of renewable energy
4) Reduction of greenhouse gas emissions in Logistics
5) Measures and implementation to reduce the greenhouse gas emissions

1) Reduction of greenhouse gas emissions through thorough improvements in production efficiency

① Promotion of efficient production activities

The G Committee, one of the committees for each material management task, is working to significantly improve productivity through innovation in production technology. Its activities enable us to save energy and reduce greenhouse gas emissions. The Committee holds 12 meetings a year and reports on the results of its activities and specific initiatives twice a year to the Managing Directors' Meeting. The Group is continuously improving and innovating its production technologies to reduce greenhouse gas emissions. The activities of the Committee are not limited to rationalization, but also challenge technological innovation and the practical application of new production technologies.

Examples of the G Committee Initiatives

Planning and implementation to:

1. reduce energy and raw material use
2. reduce greenhouse gas emissions
3. enhance productivity

② Reduction of greenhouse gases through capital investment

We are introducing a new high-efficiency gas turbine generator. In addition, we consider reducing greenhouse gas emissions as an indispensable issue in the planning of capital investment. Efforts to address climate change have penetrated throughout the Group as an important management task.

2) Through development, production and supply of environment-contributing products, contributing to the efficiency of customers' production processes, expecting to spread throughout society

The R&D, manufacturing, and sales divisions work together to develop, produce, and supply products that contribute to the environment.

The Group has a wide range of products that contribute to the reduction of greenhouse gas emissions. Each research center promptly develops new products that meet the needs of customers, and this is one of the driving forces behind the expansion of the Group's businesses.

Products that contribute to climate change mitigation

Product	Applications
PVC resins	<ul style="list-style-type: none"> •PVC pipes that can be used for a long period of time with high durability •PVC window frames that contribute to energy conservation with high heat insulation
Silicones	<ul style="list-style-type: none"> •Encapsulant materials for solar cell modules •Green-tire materials that contribute to higher fuel efficiency in vehicles •Paint additives for ship bottoms to reduce resistance from water and improve fuel efficiency
Semiconductor silicon	<ul style="list-style-type: none"> •Semiconductor devices installed in end products contribute to the efficient use of energy. •Inverters and other electronic devices that enable substantial power savings
Rare earth magnets	<ul style="list-style-type: none"> •Various types of motors, including drive motors for hybrid vehicles, electric vehicles, and fuel cell vehicles, that contribute to the electrification and energy conservation of vehicles as well as improvements in safety •Compressor motors for energy-saving air conditioners and high-efficiency motors for wind power generators
LED Encapsulant materials	<ul style="list-style-type: none"> •Major components of the optical modules of energy-saving, long-life LEDs

> Sustainability— The Shin-Etsu Group and SDGs

3) Utilization of renewable energy

As a measure to reduce greenhouse gas emissions, we have introduced cogeneration systems and solar panels. That also increases the rate of self-sufficiency in electricity. These efforts are contributing to the reduction of scope 2 emissions.

Examples of Renewable Energy Utilization

Enhancement of cogeneration system	<p>Shin-Etsu Chemical, Expansion of gas turbines in Gunma area (scheduled for completion in December 2022)</p> <p>After the completion, the amount of purchased electricity will be zero, and CO₂ emissions in the entire Gunma area of Shin-Etsu Chemical will be reduced by 14.2%.</p>
Installation of solar panels	<p>Shin-Etsu Handotai's Shirakawa plant plans to install on the rooftop of a building</p> <p>Shin-Etsu Chemical's Gunma complex installed on the rooftop of the building (Completed in February 2021)</p>

4) Reduction of Greenhouse Gas Emissions in Logistics

We are working to reduce greenhouse gas emissions during product transportation. This initiative will contribute to the reduction of scope 3 greenhouse gas emissions.

Reduction in logistics	
Examples	Scope 3 emissions categories contributing to reductions
Modal shift* in methanol transport (switched from tank truck to railcar)	Category 4: "Emissions from product transport"
Modal shift in silicon wafer transport (switched from aircraft to ocean vessel)	Category 4: "Emissions from product transport"
Promoting the reuse of wafer cases	Category 5 "Waste disposal-related emissions"

*Modal shift

Shifting from trucks and other freight transports to railways or ships with less environmental impact.

5) Measures and implementation to reduce the greenhouse gas emissions

Around the world, research on various measures to reduce the absolute amount of greenhouse gas emissions is in progress. Our group is also considering a plan to reduce the absolute amount.

— Risks and opportunities posed by climate change to our businesses

The Risk Management Committee is working to prepare for and eliminate various risks surrounding our businesses, including risks from climate change. The Committee is chaired by a Managing Corporate Officer and consists of approximately 20 members, including directors, corporate officers, and general managers of divisions of Shin-Etsu Chemical.

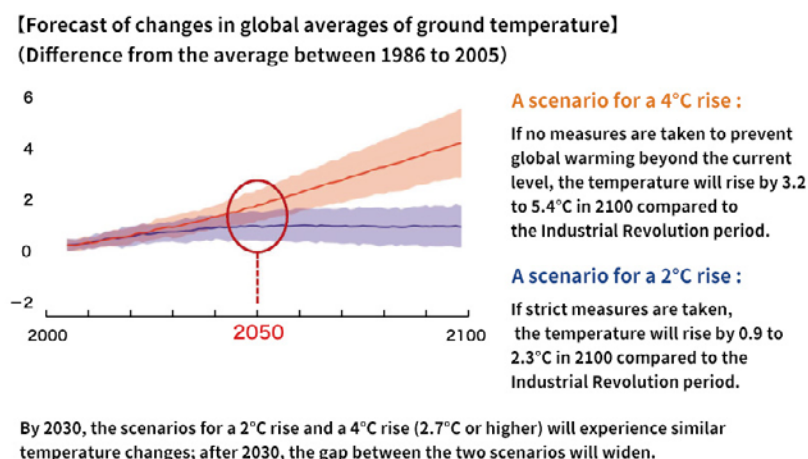
The Group has identified possible risks associated with its business activities and has established the Risk Management Regulations to deal with them appropriately. The Regulations describe specific risks, risk management systems, and responses to risks as they arise. The Risk Management Committee reports important risk management matters to the Board of Directors, the Managing Directors' Meeting, the Audit & Supervisory Board, and related parties in a timely manner, and works to take appropriate action.

> Sustainability Management - Risk Management

In FY2020, we conducted a scenario analysis of some of our businesses to identify the risks and opportunities that climate change poses to our business activities. We will continue to expand the scope of our analysis to include more businesses.

1) Assumed scenarios

Considering the impact of climate change, we have assumed scenarios for a 2°C rise and a 4°C rise for the year 2050.



Source: Integrated Report of the Fifth Assessment Report, Intergovernmental Panel on Climate Change (IPCC)

The World in 2050		
Events	2°C	4°C
Average temperature	<ul style="list-style-type: none"> • Increase by about 0.5°C compared to the level in 2020 • About 1.3°C higher than the pre-industrial level 	<ul style="list-style-type: none"> • Increase by about 1°C compared to the level in 2020 • About 1.8°C higher than the pre-industrial level
Precipitation (Difference between the 1986–2005 average and the 2081–2100 average)	<ul style="list-style-type: none"> • High latitudes, equatorial Pacific, many mid-latitude humid regions: 10–20% increase in average annual precipitation • Mid-latitude and subtropical arid regions: 10–20% decrease 	<ul style="list-style-type: none"> • High latitudes, equatorial Pacific, many mid-latitude humid regions: 40–50% increase in average annual precipitation • Mid-latitude and subtropical arid regions: 10–30% decrease
Sea level rise	<ul style="list-style-type: none"> • A rise by about 0.1 m globally on average compared to the 2020 level • A rise by about 0.2 m globally on average compared to the average for 1986–2005 	<ul style="list-style-type: none"> • A rise by about 0.15 m globally on average compared to the 2020 level • A rise by about 0.25 m globally on average compared to the average for 1986–2005
Introduction of carbon tax, setting of quotas for carbon emissions	Implemented around the world	Implemented in some countries
Ratio of renewable energy in power supply components	84%	52%
Emission coefficient for scope 2	86% reduction compared to the 2019 level	24% reduction compared to the 2019 level

Source:

Intergovernmental Panel on Climate Change (IPCC) "Fifth Assessment Report"

Intergovernmental Panel on Climate Change (IPCC) "Special Report on Oceans and Cryosphere 2019"

Ministry of the Environment, Japan Meteorological Agency (and others) "Climate Change Observation, Projection and Impact Assessment Integrated Report 2018"

International Energy Agency (IEA) "World Energy Outlook 2020"

2) Business opportunities arising from climate change: A scenario for a 2°C rise

Applications	Details	Impact
Resin windows	<ul style="list-style-type: none"> • Polyvinyl chloride resin is used for resin windows because of its excellent heat insulation properties. Demand for resin windows is expected to increase along with the spread of energy-saving homes. 	Large
Electric vehicles, hybrid vehicles, fuel cell vehicles	<ul style="list-style-type: none"> • Semiconductor silicon is used in power semiconductor devices such as inverters to control the number of rotations of motors, logic semiconductor devices for automatic driving system and AI. High-performance and compact rare-earth magnets can reduce the overall weight of a vehicle and improve its fuel efficiency, which will expand their use in the drive motors of electric, hybrid, and fuel cell vehicles, as well as in a variety of other motors in vehicles. <p>> Sustainability -Achieving a Sustainable Society Eco-friendly car and Shin-Etsu</p>	Large
Wind power generators	<ul style="list-style-type: none"> • Demand for rare earth magnets is expected to grow as they contribute to higher efficiency in offshore wind turbines and lower maintenance costs for generators. 	Large
Air conditioners	<ul style="list-style-type: none"> • Demand for semiconductor silicon is expanding as it is used in inverter control devices for compressor motors and contributes to power saving by adjusting the rotation speed of the motor to an appropriate level. • Demand for rare earth magnets is expected to grow as they improve the energy efficiency of air conditioner compressor motors and reduce energy consumption. 	Medium
Aircrafts	<ul style="list-style-type: none"> • Rare earth magnets are indispensable for the electrification and hybridization of small aircraft and for the electrification of hydraulic drive units in large aircraft. Demand for rare earth magnets is expected to increase as their small size and high power will help reduce the weight of the aircraft and improve fuel efficiency. 	Medium
Motors for industrial use	<ul style="list-style-type: none"> • Demand for rare earth magnets is expected to grow as they increase the efficiency of industrial motors and reduce the amount of electricity consumed. 	Medium
Robots for services	<ul style="list-style-type: none"> • Semiconductor silicon is increasingly being used in semiconductors for energy-saving robot control motors for manufacturing, logistics, agriculture, and other applications, as well as in medical and disaster response robots. 	Medium

3) Business risks due to climate change and countermeasures: A scenario for a 2°C rise

Events	Risks to the Company	Impact	Countermeasures
Widespread use of electricity derived from renewable energy sources and rising electricity prices resulting from tightening regulations on greenhouse gas emissions	<ul style="list-style-type: none"> • Increase in electricity costs 	Large	<ul style="list-style-type: none"> • Reduce scope 2 emissions <ul style="list-style-type: none"> ▶ Further promotion of production processes that use less electricity, introduction of high-efficiency equipment, etc. ▶ Introduction of cogeneration systems using carbon-neutral natural gas (natural gas with emission credits)
Introduction of carbon taxes and establishment of carbon emission quotas around the world	<ul style="list-style-type: none"> • Payment of carbon tax • Incurring costs of purchasing emission credits to meet carbon emission quotas 	Medium	<ul style="list-style-type: none"> • Reduce scope 1 emissions <ul style="list-style-type: none"> ▶ Further promotion of more efficient production processes and introduction of highly efficient equipment, etc. ▶ Use of energy sources that do not emit carbon dioxide, such as hydrogen and ammonia ▶ Use of CCUS ▶ Use of carbon-neutral natural gas as a heat source • Use of hydrogen-reduced iron materials • Establishment and achievement of reduction targets in the absolute amount of greenhouse gas emissions • Collection of information on environmental regulations such as carbon taxes in each country and implementation of countermeasures
Occurrence of extreme weather (typhoons, river flooding, etc.)	<ul style="list-style-type: none"> • Flooding of production sites • Disruption of the supply chain 	Small	<ul style="list-style-type: none"> • Raising the ground level of production sites, installation of watertight walls around critical facilities, installation of instrument rooms in areas with low risk of flooding, installation of seawalls at production sites close to ports • Multiple production bases • Diversification of raw material procurement sources • Securing product inventory • Enrollment in damage insurance

4) Business risks due to climate change and countermeasures: A scenario for a 4°C rise

Events	Risks to the Company	Impact	Countermeasures
<p>Increase in the frequency of extreme weather events</p> <p>Increased frequency of flooding caused by changes in precipitation patterns, etc.</p>	<ul style="list-style-type: none"> • Flooding of production sites • Disruption of the supply chain 	Large	<ul style="list-style-type: none"> • Raising the ground level of production sites, installation of watertight walls around critical facilities, installation of instrument rooms in areas with low risk of flooding, installation of seawalls at production sites close to ports • Multiple production sites • Diversification of raw material procurement sources • Securing product inventory • Enrollment in damage insurance
<p>Introduction of carbon taxes and establishment of carbon emission quotas in some countries</p>	<ul style="list-style-type: none"> • Payment of carbon tax imposed on greenhouse gases emitted from production sites in the said countries • Costs of purchasing emission credits and payment of surcharges will be incurred if our greenhouse gas emissions do not meet the carbon emission targets established by the said countries. 	Small	<ul style="list-style-type: none"> • Reduce scope 1 emissions <ul style="list-style-type: none"> ▢ Further promotion of more efficient production processes and introduction of highly efficient equipment, etc. ▢ Use of energy sources that do not emit carbon dioxide, such as hydrogen and ammonia ▢ Use of CCUS ▢ Use of carbon-neutral natural gas as a heat source • Use of hydrogen-reduced iron materials • Establishment and achievement of reduction targets in the absolute amount of greenhouse gas emissions • Collection of information on environmental regulations such as carbon taxes in each country and implementation of countermeasures
<p>Electricity prices</p>	<ul style="list-style-type: none"> • According to a scenario analysis by IEA (a scenario with current measures), electricity prices will not rise. Therefore, there is no risk to us. 	—	—

— Our company's initiative

Shin-Etsu Group and SDGs



Achieving a Sustainable Society



PVC/Chlor-Alkali business	Semiconductor Silicon Business	Silicones Business	Electronics & Functional Materials Business
Specialty Chemicals Business	Processing, Trading & Specialized Services Business		

Contributing to the Achievement of SDGs Through Product

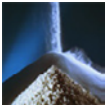











PVC/Chlor-Alkali business



Approximately 60% of the raw materials used in PVC are salts, which are abundant throughout the world. Compared to other general-purpose resins, the benefits of PVC include a low dependence on petroleum resources, placing a relatively small burden on the environment. The process of manufacturing PVC from raw materials uses around 60% of the energy required to make other general-purpose resins. Highly durable and easy to recycle, PVC is used for a wide range of social infrastructure materials, including vinyl windows, water and sewerage pipes, public works and other construction.

Example ^

Segment	Our Products	Sustainable Development Goals (SDGs)	Solution Example
PVC/Chlor-Alkali business	 > Polyvinyl chloride (PVC)	 Goal2 ZERO HUNGER End hunger, achieve food security and improved nutrition and promote sustainable agriculture	PVC is used for agricultural films such as vinyl plastic hothouses and plastic tunnel culture. It provides agricultural materials indispensable to grow vegetables and other crops.

PVC/Chlor-Alkali business	 <p>> Polyvinyl chloride (PVC) </p>	 <p>Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all</p>	PVC window reduce the amount of heat that escapes from windows by 71% compared to aluminum windows.
		 <p>Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts</p>	
		 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	
	 <p>> Sodium hypochlorite </p> <p>> caustic soda </p> <p>hydrochloric acid</p>	 <p>Goal6 CLEAN WATER AND SANITATION Ensure availability and sustainable management of water and sanitation for all</p>	Make tap water and drinking water safe and sanitary by using high-quality sodium hypochlorite with less impurities to sterilize the water.
		 <p>Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns</p>	
		 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	Caustic soda and hydrochloric acid make harmful substances generated from productive operations harmless, protecting the air and aquatic environment.
		 <p>Goal11 SUSTAINABLE CITIES AND COMMUNITIES Make cities and human settlements inclusive, safe, resilient and sustainable</p>	



As a basic material supporting our high-speed information society, silicon wafers contribute to the improvement of electronic device performance, the miniaturization of electrical equipment and energy conservation. Silicon wafers are a particularly essential material in the automotive field, where they are utilized to reduce environmental impact, improve safety and automate vehicle operation. Furthermore, they are useful for the stable supply of electric power, mainly to electronic equipment, as power semiconductors can minimize power consumption and accommodate high voltage and high currents. Group products also are used to accurately regulate motor drive controls from high to low speeds and used as power-saving transistors enabling the efficient transfer of power from generators to transmission lines.

Example ^

Segment	Our Products	Sustainable Development Goals (SDGs)	Solution Example
Semiconductor Silicon Business	 > Semiconductor silicon	 Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages	Semiconductor silicon is used for electronic devices of medical devices and medical robots.
		 Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all	<ul style="list-style-type: none"> •Semiconductor silicon is used in electronic devices such as inverters that enable substantial power conservation.
		 Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts	<ul style="list-style-type: none"> •Semiconductor silicon is used for electronic devices that control the fuel efficiency of motor vehicles.

Semiconductor
Silicon Business



> Semiconductor
silicon 



Goal9
**INDUSTRY, INNOVATION
AND INFRASTRUCTURE**
Build resilient
infrastructure, promote
inclusive and sustainable
industrialization and
foster innovation

- We provide silicon wafers that are most suitable for the miniaturization and high functionality of semiconductor devices.
- It has become the core material of semiconductors indispensable for industrial innovation such as AI (artificial intelligence) and IoT (the Internet of Things: which means that everything is connected to the Internet through networks).
- It is used in electronic devices that control hybrid cars, electric cars, etc., contributing to substantial reductions in CO₂ emissions.
- Promote reuse of silicon wafer shipping containers.



Goal11
**SUSTAINABLE CITIES
AND COMMUNITIES**
Make cities and human
settlements inclusive,
safe, resilient and
sustainable

It is used for surveillance
cameras and monitor camera
sensors that protect safe life.



Silicone primarily consists of silicon (Si), which is the second-most abundant element found in the outer layer of the earth's crust, behind oxygen. It is associated with a low dependence on petroleum resources and a low environmental footprint. Furthermore, it contributes to the achievement of sustainable societies, as it is used in solar power generation and other environmentally friendly products, including electric vehicles, eco tires and LED lights.

Example ^

Segment	Our Products	Sustainable Development Goals (SDGs)	Solution Example
Silicones Business	 > Silicones	 Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages	<ul style="list-style-type: none">•Silicones are used to provide contact lenses with oxygen permeability. They help enhance the performance of contact lenses.•They are used for the joint motors of nursing care and support robots, such as to help reduce heavy workloads for nurses and caregivers, cushioning, and electronic device control.
		 Goal6 CLEAN WATER AND SANITATION Ensure availability and sustainable management of water and sanitation for all	The use of silicone antifoaming agents in sewage water suppresses the foaming of sewage discharged into rivers.

Silicones
Business



> Silicones 



Goal7
AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable, reliable, sustainable and modern energy for all



Goal13
CLIMATE ACTION

Take urgent action to combat climate change and its impacts



Goal9
INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



Goal11
SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient and sustainable



Goal14
LIFE BELOW WATER

Conserve and sustainably use the oceans, seas and marine resources for sustainable development



Goal15
LIFE ON LAND

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

- Solar batteries can be used for 30 years or more by sealing their modules with weather-resistant, durable silicone.
- Silicones are used as raw materials for ship bottom paint .
- By preventing marine organisms from sticking to them, the fuel efficiency of the ship is improved.
- By replacing metal parts of motor vehicles with silicone products, fuel efficiency will be improved.

Highly waterproof silicone adhesive sheets are adhered to outdoor tanks or the joints of walls of viaducts. Silicone adhesive sheets have a long service life and are easier to handle than butyl rubber or urethane resin, thus contributing to the promotion of sustainable urbanization.






Silicones are used as raw materials for ship bottom paint and antifouling agents for fishing nets. They help prevent marine organisms from sticking to them, protecting the ocean ecosystem.












The use of silicones as a spreader for agricultural chemicals makes them spread easily. As a result, the amount of agricultural chemicals sprinkled can be reduced.































Rare earth magnets have about 10 times the magnetic force of conventional ferrite magnets and are used to reduce the weight of motors and increase electrical power regeneration. These magnets help reduce greenhouse gas emissions while increasing the power efficiency of a variety of products, including environmentally friendly vehicles and energy-saving air conditioners.











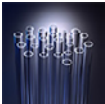







Example ^


Segment	Our Products	Sustainable Development Goals (SDGs)	Solution Example
Electronics & Functional Materials Business	 > Rare earth magnets	 Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages	Rare earth magnets are used for the joint motors of nursing care and support robots, such as to help reduce heavy workloads for nurses and caregivers, cushioning, and electronic device control.
		 Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all	<ul style="list-style-type: none"> •The use of rare earth magnets for the compressor motor of air-conditioning systems increases energy consumption efficiency and reduces power consumption. •The use of rare earth magnets for industrial motors increases motor efficiency and reduces power consumption.
		 Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts	<ul style="list-style-type: none"> •The use of high-performance small rare earth magnets for the driving motor of hybrid cars, electric vehicles, and fuel-cell vehicles and various motors for vehicles helps reduce the overall weight of the cars or vehicles, thus increasing fuel efficiency.
		 Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns	<ul style="list-style-type: none"> •Rare earth magnets contribute to making wind power generators highly efficient.

Electronics & Functional Materials Business	 > Rare earth 	 Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages	Rare earth is used for scintillator materials for diagnostic imaging systems such as CT scanning and PET. It contributes to reducing X-ray doses, high-speed diagnosis, and improving diagnostic accuracy.
		 Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all	<ul style="list-style-type: none"> •Rare earth is used as a material for fluorescent substances, which convert the color of LED to white. The use of long-life LED for lighting and displays contributes to energy conservation. •It is used in oxygen sensors to suppress emissions from gasoline vehicles.
		 Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts	
		 Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	<ul style="list-style-type: none"> •Rare earth is used for electronic components, which are indispensable to smartphones as they become smaller and smaller and offer increasingly high performance, as well as for the safe driving of vehicles and automated operation systems. •Highly plasma-resistant rare earth materials are attracting attention as they enhance the performance of semiconductor production equipment as semiconductor devices indispensable to AI, IoT, and smart grids evolve.
		 Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns	
	 > LED encapsulating materials 	 Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all	Among long-life, energy-saving LED optical modules, silicone packaging materials are used for most of the major components other than LED.
		 Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts	

Electronics & Functional Materials Business	 <p>> Semiconductor encapsulating materials </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	Semiconductor encapsulating materials are used for electronic devices (such as monitors and sensors) for medical equipment (MRI and medical testers).
		 <p>Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all</p>	Semiconductor encapsulating materials are used for electronic devices that control the fuel efficiency of motor vehicles.
		 <p>Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts</p>	
		 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<ul style="list-style-type: none"> •Semiconductor encapsulating materials contribute to development of next-generation semiconductors such as stacked three-dimensional semiconductors. •They provide materials and technologies indispensable to artificial intelligence (AI), Internet of things (IoT, which means that everything is connected to the Internet through networks), and smart grids.
		 <p>Goal11 SUSTAINABLE CITIES AND COMMUNITIES Make cities and human settlements inclusive, safe, resilient and sustainable</p>	
	 <p>> Silicon tetrachloride </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	It is used in electronic devices (monitors, sensors, etc.) for medical equipment (MRI and medical examination equipment).
		 <p>Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all</p>	<ul style="list-style-type: none"> •It is used in electronic devices including inverters and other devices that enable significant power savings. •It is used in electronic devices that control the performance of fuel efficiency for automobiles.
		 <p>Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts</p>	

Electronics & Functional Materials Business	 <p>> Silicon tetrachloride </p>	 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<ul style="list-style-type: none"> • It is used in silicon wafers, which are ideal for the miniaturization and functionalization of semiconductor devices. • It is a key material for semiconductors that is vital for industrial innovations such as AI (artificial intelligence) and IoT (Internet of Things: everything is connected through networks). • It is used in electronic devices that control hybrid cars, electric cars, etc., which significantly reduce CO₂ emissions.
	 <p>> Synthetic quartz substrates </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	In DNA analysis, synthetic quartz wafers are used for fixed DNA sequencing boards for detection. They contribute to reducing the analytical time and improving the resolution.
	 <p>> Synthetic quartz wafers </p>	 <p>Goal4 QUALITY EDUCATION Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p>	Synthetic quartz wafers are used for TFT liquid crystal panels for educational data projectors at schools and other institutions. They project a larger image of the teaching materials to clarify the aims of learning and allow students to easily share what they are studying.
	 <p>> Synthetic quartz preforms for optical fibers </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	Synthetic quartz fibers are used for some medical endoscopes and fiber scopes. Compared to previous ones, they reduce the burden on patients and enable more accurate diagnosis and treatment.
	 <p>> Oxide single crystals (Lithium Tantalate) </p>	 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	Synthetic quartz fibers are used as materials for optical fibers, which are essential for the information society.
		 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	Oxide single crystals are used for mobile phones' SAW filters, which screens electromagnetic waves and only picks up specific frequencies, contributing to enhancing the functions of mobile phones and improving their sound quality.

Electronics & Functional Materials Business	 <p> > Photoresists </p> <p> > Photomask blanks </p> <p> > 3D packaging material </p>	 <p>Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all</p>	<p>Photoresists and Photomask are used for electronic devices that control the fuel efficiency of motor vehicles.</p> <ul style="list-style-type: none"> •Photoresists and Photomask blanks contribute to development of next-generation semiconductors such as stacked three-dimensional semiconductors. •They provide materials and technologies indispensable to artificial intelligence (AI), Internet of things (IoT, which means that everything is connected to the Internet through networks), and smart grids.
		 <p>Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts</p>	
		 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	
	 <p> > Anode material of lithium ion batteries </p>	 <p>Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns</p>	<p>The anode material of lithium ion batteries increases the capacity and output of lithium ion secondary batteries.</p>
	 <p> > Quartz glass for lamps </p>	 <p>Goal6 CLEAN WATER AND SANITATION Ensure availability and sustainable management of water and sanitation for all</p>	<p>Ultraviolet lamps using quartz glass tubes sterilize super-pure water and drinking water to secure safe, high-quality water. They are also used to sterilize foodstuffs.</p>
	 <p> > Quartz glass products for semiconductor manufacturing </p>	 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<p>Quartz glass for lamps are used as materials for optical fibers, which are essential for the information society.</p>
		 <p>Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all</p>	<p>Quartz glass products for semiconductor manufacturing are used for electronic devices that control the fuel efficiency of motor vehicles.</p>
		 <p>Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts</p>	


	 <p>> Quartz glass products for semiconductor manufacturing </p>	 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<ul style="list-style-type: none"> • Quartz glass products for semiconductor manufacturing contribute to development of next-generation semiconductors such as stacked three-dimensional semiconductors. • They provide materials and technologies indispensable to artificial intelligence (AI), Internet of things (IoT, which means that everything is connected to the Internet through networks), and smart grids.
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Specialty Chemicals Business



Industrial cellulose derivatives reduce the separation of concrete in water, enabling concrete to be poured without polluting water. This contributes to environmental preservation by preventing water pollution. Synthetic pheromones are very safe, environmentally friendly and eliminate agricultural pests. They are useful for making food safer through the reduction of insecticides and agricultural chemicals sprayed in fields.











Example ^














Segment	Our Products	Sustainable Development Goals (SDGs)	Solution Example
Specialty Chemicals Business	 <p>> Cellulose derivatives </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	<ul style="list-style-type: none"> • If Cellulose derivatives are added to tablets, they enable the adjustment of the location of the tablets' dissolution, the amount dissolved, and the time required for their dissolution in the body. • The bitterness and smell of tablets can be eliminated by covering them with cellulose films, making them easier to take. • Use as a binder for plant based meat alternatives, makes it possible to create a similar texture to real meat, which cannot be achieved with soy or other raw materials alone.

Specialty Chemicals Business			Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all	Cellulose derivatives are used to mold electrolytic ceramics for solid-oxide fuel cells, which are used for the Ene-Farm home-use fuel cell.
			Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts	
			Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
			Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns	
			Goal14 LIFE BELOW WATER Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
			Goal2 ZERO HUNGER End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Synthetic pheromones provide a new type of agricultural material that suppresses the mating of harmful insects to prevent the growth of the next generation of such insects. Since it aims only at eliminating agricultural insects, agricultural products can be cultivated while maintaining the ecosystem of many living creatures such as these insects' natural enemies.
			Goal6 CLEAN WATER AND SANITATION Ensure availability and sustainable management of water and sanitation for all	
				By using synthetic pheromones, it is possible to reduce the spread of agricultural chemicals that cause contamination of groundwater and rivers.

> Cellulose derivatives 

> Synthetic pheromones 

Specialty Chemicals Business	 <p>> Synthetic pheromones </p>	 <p>Goal15 LIFE ON LAND Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</p>	<p>Synthetic pheromones provide a new type of agricultural material that inhibits the mating of harmful insects to reduce the next generation of these insects. By using synthetic pheromones,</p> <ul style="list-style-type: none"> •since it aims only at eliminating agricultural insects, agricultural products can be cultivated while maintaining the ecosystem of many living creatures such as these insects' natural enemies. •it is possible to reduce the spread of agricultural chemicals that cause contamination of groundwater and rivers.
	 <p>> Silicone/acrylic group hybrid resin </p>	 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<p>It is used in industrial hoses and abrasion-resistant electric wires. When blended into the main resin of hoses and wires, it can provide durability. When added to paints, etc., it provides water repellency as well as an antifouling effect, which reduces the frequency of repainting.</p>
	 <p>> Vinyl chloride emulsion / Vinyl chloride wallpaper surface processing / Acrylic wallpaper surface processing </p>	 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>  <p>Goal11 SUSTAINABLE CITIES AND COMMUNITIES Make cities and human settlements inclusive, safe, resilient and sustainable</p>	<p>Taking advantage of its excellent pigment dispersibility, it is applied to water-based inks for inkjet digital printing systems. Compared to conventional analog printing, it contributes to low VOC, small-volume production of a large variety of products, production with short delivery lead times and reduction of environmental impact.</p> <p>By applying wallpaper coated with this treatment agent to hotels and ordinary houses, odors generated by human activities will be decomposed. In addition, the water repellency makes it difficult for stains to adhere, which leads to a reduction in the frequency of replacement.</p>

Specialty Chemicals Business	 <p>> Vinyl acetate emulsion resin </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	<p>Binder for glass wool heat insulation material that does not use organic solvent and does not generate VOC. By using this product as a heat insulating material, a safe living space can be realized without fear of sick house syndrome. It also contributes to making houses more energy efficient.</p>
		 <p>Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all</p>	
		 <p>Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts</p>	
	 <p>> Vinyl chloride-Vinyl acetate based copolymer </p>	 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<p>It has excellent pigment dispersion stability and chemical resistance, is highly soluble in solvents with low environmental impact, and is used as a raw material for environmentally-friendly gravure inks.</p>
	 <p>> Acetylenic chemicals Silicone family additive agents </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	<ul style="list-style-type: none"> • It has been adopted as a water-based ink for digital printing by inkjet for its excellent ability to reduce surface tension and its defoaming properties. Relative to conventional analog printing, it contributes to low VOC, production of many kinds of products in small quantities and short delivery time, and reduction of environmental impact. • It is also used in digital printing inkjet inks for textiles. Compared with the conventional dyeing process, there is almost no loss of dyeing materials, which contributes to reducing the amount of wastewater treatment.
		 <p>Goal6 CLEAN WATER AND SANITATION Ensure availability and sustainable management of water and sanitation for all</p>	
		 <p>Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	

Specialty
Chemicals
Business



> [Polyvinyl alcohol](#)



Goal3 GOOD HEALTH AND WELL-BEING

Ensure healthy lives and
promote well-being for all
at all ages

- Coating the surface of tablets with polyvinyl alcohol, which has high gas barrier properties, contributes to preventing the degeneration of medicines and reducing their smells.
- The fibers of polyvinyl alcohol replace asbestos, which causes mesothelioma and pneumoconiosis. They prevent exposure to asbestos from construction materials, etc.
- Water-soluble film laundry bags made from polyvinyl alcohol enable laundry to be washed without touching the used clothes, which reduces the risk of contamination and infection.



Goal11 SUSTAINABLE CITIES AND COMMUNITIES









Make cities and human
settlements inclusive,
safe, resilient and
sustainable

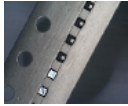






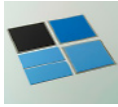

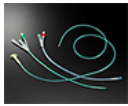









Polyvinyl alcohol provides the raw materials for polyvinyl butyral, which is used for the intermediate films of window glass for vehicles and buildings. It helps prevent fragments of glass from scattering when glass is broken due to an accident or similar.



The construction material (corrugated rigid polycarbonate sheets) manufactured by Shin-Etsu Polymer Co., Ltd. is used as an exterior roofing material. Using more than 50% reclaimed raw materials, this product contributes to recycling. In addition, the company's in-vehicle touch input device, which is overwhelmingly lighter than conventional mechanical switches, contributes to improved fuel efficiency in automobiles.


Example ^

Segment	Our Products	Sustainable Development Goals (SDGs)	Solution Example
Processing, Trading & Specialized Services Business	 > Input device	 Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Conventional mechanical switches consist of many parts such as buttons and frames, but touch switches are comprised of a sheet of film. This conserves resources and reduces the weight of switches. The use of these for onboard switches leads to a reduction in the overall weight of a car, improving its fuel efficiency.
	 > Wafer Cases	 Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all	Wafer cases are used for transport between semiconductor silicon manufacturers and device manufacturers. Their overall weight is reduced by using a smaller number of parts, and this enables reduction in energy consumption during transport.
		 Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts	
	 > Plastic tape frame	 Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all	The weight of these products is half or less than that of the previous metallic ones, thus reducing CO ₂ emissions during transport.
		 Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts	

Processing, Trading & Specialized Services Business	 <p>> Embossed carrier tapes </p>	 <p>Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns</p>	<ul style="list-style-type: none"> It is a tape for transporting ultra-small chip electronic components. It contributes to saving resources as it uses less raw materials than conventional products, and also reduces the amount of waste.
	 <p>> Office automation roller </p>	 <p>Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all</p>	Office automation roller are used in laser printers and toner cartridges. Development of rollers with a particularly small external diameter contributes to reducing the power consumption of printers.
		 <p>Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts</p>	
	 <p>HSP</p>	 <p>Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns</p>	HSP is a jig plate used in the electronic component manufacturing process for fixation. The use of slightly adhesive silicones for raw materials eliminates the need for adhesive tapes. In addition, HSP can be used repeatedly.
	 <p>> Catheters </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	In some cases, the use of catheters enables treatment and testing without performing surgical operations.
	 <p>> Shupua </p>	 <p>Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all</p>	Shupua consists of glass made from silicon rubber. It can be manufactured using a smaller amount of energy than glass.
		 <p>Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts</p>	
	 <p>> Wrapping film </p>	 <p>Goal3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages</p>	Wrapping films maintain foods, etc., in a sanitary condition when storing them. They also allow them to be preserved over a long period of time.

Processing,
Trading &
Specialized
Services
Business



> Functionality
compounds EXELAST
SX series 



Goal7
**AFFORDABLE AND
CLEAN ENERGY**
Ensure access to
affordable, reliable,
sustainable and modern
energy for all



Goal9
**INDUSTRY, INNOVATION
AND INFRASTRUCTURE**
Build resilient
infrastructure, promote
inclusive and sustainable
industrialization and
foster innovation



Goal13
CLIMATE ACTION
Take urgent action to
combat climate change
and its impacts

It is used as a glass run
channel material for
automobile window frames. This
product is lighter than the
previous rubber glass runs,
contributing to lower fuel
consumption for vehicles.



> PVC pipe 



Goal6
**CLEAN WATER AND
SANITATION**
Ensure availability and
sustainable management
of water and sanitation
for all



Goal9
**INDUSTRY, INNOVATION
AND INFRASTRUCTURE**
Build resilient
infrastructure, promote
inclusive and sustainable
industrialization and
foster innovation

The use of highly durable PVC
for PVC pipes and joints makes
replacement of service water
and sewage piping
unnecessary for at least 50
years.



> Shin-Etsu polycarbonate
toff 



Goal12
**RESPONSIBLE
CONSUMPTION AND
PRODUCTION**
Ensure sustainable
consumption and
production patterns

Materials recycled from
polycarbonate are used for at
least 50% of the product.



> Shin-Etsu self lock
bantage 



Goal9
**INDUSTRY, INNOVATION
AND INFRASTRUCTURE**
Build resilient
infrastructure, promote
inclusive and sustainable
industrialization and
foster innovation

If water leaks from water pipes
and other pipes, they can be
repaired simply by stretching
and winding this bandage
around the pipe, which makes
maintenance easy.












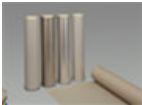













> Conductive polymer
(SEPLEGYDA®) 



Goal12
**RESPONSIBLE
CONSUMPTION AND
PRODUCTION**
Ensure sustainable
consumption and
production patterns

Conductive polymers are used
for hybrid electrolytic
condensers with aluminum.
They help reduce the quantity
and area of condensers used
compared to electrolytic
aluminum condensers.

Processing, Trading & Specialized Services Business		<div>  Goal7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all </div>	Carbon mold separators are used as one of clean fuel cells' principal components.
	Carbon mold separator	<div>  Goal13 CLIMATE ACTION Take urgent action to combat climate change and its impacts </div>	
		<div>  Goal2 ZERO HUNGER End hunger, achieve food security and improved nutrition and promote sustainable agriculture </div>	Biodegradable runner clips are used to fix agricultural products during agricultural work. They do not need to be collected after use because they are decomposed by microorganisms.
		<div>  Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns </div>	
		<div>  Goal15 LIFE ON LAND Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss </div>	Biodegradable runner clips are agricultural materials used to fix agricultural products. They do not contaminate soil because they are decomposed by microorganisms in the ground after they are used.
		<div>  Goal15 LIFE ON LAND Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss </div>	Yosaku sheets are used to cover damaged pines when they undergo fumigation. Since they are biodegradable, they contribute to environmental protection even after they are used.
		<div>  Goal11 SUSTAINABLE CITIES AND COMMUNITIES Make cities and human settlements inclusive, safe, resilient and sustainable </div>	This toilet booth reduces the risk of a finger being caught in the booth. In addition, if, for example, an accident (such as a sudden illness or other unexpected event) occurs when it is being used, the door can easily be opened from the outside. These functions provide a safe toilet space.
		<div>  Goal12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns </div>	It is a PEEK film used in vibration membranes for speakers and receivers, high-frequency 5G circuits, etc. The thickness of this film is about a half that of conventional products, which reduces the amount of raw materials used and waste.

Processing, Trading & Specialized Services Business	 > Polymerace	 Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	It is used for joining artificial marble top panels and stainless steel sinks in system kitchens. Compared with the conventional method, the processing time can be reduced to one sixth, and the work space also can be reduced as there is no need for a primary storage area after processing.
	 > PolymeraceTG	 Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	It is used for securing RFIDs to tools and equipment. Compared to conventional binding bands and double-sided tapes, it has high adhesive durability as it is made of silicone, and it is easy to replace without leaving any glue residue.
	 > Shinetsu Silicosen/ Bio-Silico	 Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	It is a silicone rubber material with continuous bubbles and used as a culture plug. This material does not require complicated work to make cotton plugs, and contributes to labor savings and reusability.
	 Agriputtyaqua	 Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	This is used for maintenance of defective sections of irrigation channels and cracked irrigation channels. In contrast to conventional repair work that requires removal and replacement, this product allows maintenance to be carried out in its current state, so there is no waste generated by replacement. The impact on the surrounding environment can be kept to a minimum as no work is required for removal or the like.
	 > Shin-Etsu capacitor films	 Goal9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	<ul style="list-style-type: none"> •The use of Shin-Etsu capacitor films makes the replacement of condensers for power transmission networks unnecessary for 30 years. •They are used for condensers at frequency converter stations (east-west interconnection) to contribute to the stable supply of electricity.

— Special content

Shin-Etsu Group and SDGs



Shin-Etsu Group and Climate Change



Management

Shin-Etsu Group Business Principle/Basic ESG Policy

Shin-Etsu Group
Business Principle/
Basic ESG Policy

Corporate Governance

Risk Management

Shin-Etsu Group Business Principle/ Basic ESG Policy	ESG Promotion Structure	List of executives in charge of ESG initiatives	Participant in UN Global Compact
Evaluation from Society	Utilization of Supply Chain CSR Management Systems		

— Shin-Etsu Group Business Principle

The Group strictly complies with all laws and regulations, conducts fair business practices and creates unrivaled value for society and industry through the provision of key materials and technologies.

— Basic ESG Policy

The Shin-Etsu Group will:

1. Do our best to increase the Group's corporate value through sustainable growth and make multifaceted contributions to society.
2. Carry out all of our company activities by always prioritizing safety first.
3. Constantly pursue the reduction of energy consumed, resources consumed, and environmental impact, and seek to help create a sustainable future world in which we all live in harmony with the Earth.
4. Endeavor to contribute to the prevention of global warming and the conservation of biodiversity by means of our cutting-edge technologies and products.
5. Strive to respect human rights, assure equality in employment opportunities, and support the self-fulfillment of our employees.
6. Appropriately disclose information in a timely manner.
7. Carry out healthy, trustworthy, transparent corporate activities based on the integrity of the Group's ethical values.

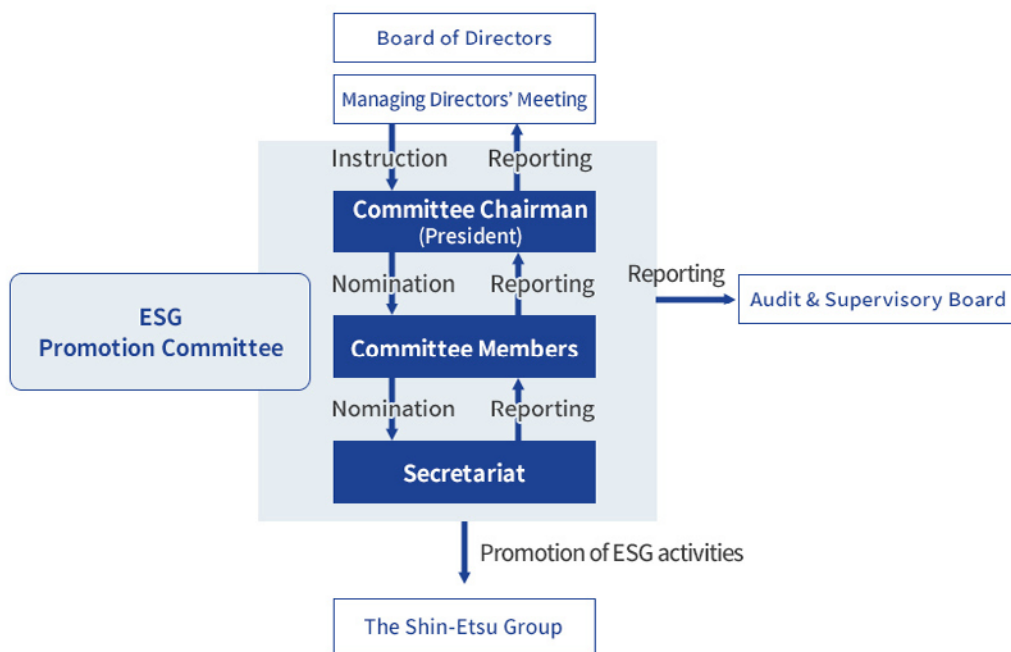
— ESG Promotion Structure

ESG Promotion Initiatives

The Group believes that it is the social responsibility of the Group to contribute to all of our stakeholders, such as shareholders, investors, customers, suppliers, local communities, and employees. To achieve this, we formulated the "Basic ESG Policy" and internal regulations and carry out ESG activities.

In order to promote ESG activities effectively and properly at a company-wide level in all aspects of corporate activities, we have set up the ESG Promotion Committee, which is chaired by the President and comprises approximately 50 members, including Directors, Corporate Officers and department heads of Shin-Etsu Chemical and ESG officers from group companies.

ESG Organizational Chart



Outline of the Business Principle, Basic ESG Policy, and the Shin-Etsu Group's Activities



Issues and Progress of ESG Promotion

The issues and achievements of ESG promotion in FY2020 and the activities scheduled for FY2021 are as follows.



ESG Promotion Committee general meeting
(November 2019, Shin-Etsu Chemical Head office)

Issues	Progress in FY2020	Schedule for FY2021
Integration of SDGs and management	Set "Contributing to SDGs" as one of the management objectives for FY2020 and promoted it within the company.	Develop and supply products that contribute to SDGs.
Human rights due diligence ¹	<ul style="list-style-type: none"> • Follow up the human rights risk surveys at domestic and overseas Group companies which were conducted in FY2019. • Identified human rights risk for the Group. • Began constructing an internal complaint system. 	<ul style="list-style-type: none"> • Identify important human rights risks based on the results of human rights risk surveys. • Develop human rights awareness and educational programs. • Construct a grievance mechanism (ongoing).
Response to TCFD ²	<ul style="list-style-type: none"> • Conducted a Climate Change Scenario Analysis that targets some of our businesses 	<ul style="list-style-type: none"> • Conduct a Climate Change Scenario Analysis (ongoing).

¹ Human rights due diligence

An activity whereby a company recognizes, prevents, and addresses adverse effects related to human rights both within and outside the company by repeating the PDCA cycle of (1) formulating and disclosing human rights policies, (2) assessing the impact of our business activities on human rights, (3) preventing and correcting negative impacts, and (4) tracking and disclosing performance data.

² Task Force on Climate-related Financial Disclosures (TCFD)

A special team focusing on disclosure of financial information concerning climate change, which was requested by G20 and established by the Financial Stability Board (FSB) in December 2015. In July 2017, the TCFD published a set of recommendations calling for corporations to analyze their risks and opportunities based on future scenarios and various mid to long-term predictions of climate change, and to disclose the impact on their finances to investors, etc.

— List of Executives in Charge of ESG Initiatives

Position	Name	Current Positions (related to ESG)	Key ESG Issues
Vice Chairman	Fumio Akiya	In charge of Technologies	Key Issue : Product quality improvements and product safety control
President	Yasuhiko Saitoh	Chairman of ESG Promotion Committee	
Managing Corporate Officer	Toshiya Akimoto	Vice Chairman of ESG Promotion Committee In charge of Public Relations, Legal Affairs and Purchasing General Manager of Office for Digitization and Digitalization Chairman of Risk Management Committee	The foundation of all activities: legal compliance, fair corporate activities Key Issue : Promoting CSR procurement and the diversification of supply sources Key Issue : Respect for and protection of intellectual property Key Issue : Accurate and timely information disclosure and communication with stakeholders Risk Management
Managing Corporate Officer	Yukihiro Matsui	In charge of Patents	Key Issue : Respect for and protection of intellectual property
Managing Corporate Officer	Kenji Ikegami	In charge of General Affairs, Personnel & Labor Relations and Business Auditing	Corporate Governance Key Issue : Respect for human rights, the development of human resources and the promotion of diversity
Corporate Officer	Toshiyuki Kasahara	General Manager of Finance & Accounting Dept. In charge of Office of the President	Corporate Governance (Fair tax payment, Operation of Group Companies) Corporate Governance (Fair tax payment, Operation of Group Companies)
Corporate Officer	Yoshimitsu Takahashi	In charge of Environmental Control & Safety	Key Issue : Employees and contractors health and safety Key Issue : Energy-saving, resource-saving and reduction of the environmental impact

As of June 29, 2021

— Participating in the UN Global Compact

In November 2010, the Group joined the UN Global Compact. Life in society has become more complex and diverse in recent years, and the social responsibilities of enterprises have grown.

The Group remains firmly committed to its business principle of complying with all laws and regulations, conducting fair business practices and creates unrivaled value for society and industry through the provision of key materials and technologies. At the same time we respond flexibly to changes in the social and economic environment.

The Group has also been participating in the Global Compact Network Japan (GCNJ) since November 2010. The Group joins subcommittees, such as the Supply Chain Subcommittee and ESG Subcommittee, to use the information gained on the latest development of ESG to promote the Group's ESG.

The Group, as the first in Japan, signed a document to support GCNJ's Tokyo Principles for Strengthening Anti-Corruption Practices in February 2018. In September 2019, we participated in the Anti-Corruption Forum 2019 sponsored by the GCNJ Anti-Corruption Commission, where we discussed anti-corruption issues with lawyers and other specialists, as well as the personnel in charge of anti-corruption at other companies.



Anti-Corruption Forum 2019
(September 2019)

> Key ESG Issues - The Foundation of All Activities: Legal Compliance, Fair Corporate Activities

Global Compact Ten Principles

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
Principle 2: make sure that they are not complicit in human rights abuses.
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
Principle 4: the elimination of all forms of forced and compulsory labour;
Principle 5: the effective abolition of child labour; and
Principle 6: the elimination of discrimination in respect of employment and occupation.
Principle 7: Businesses should support a precautionary approach to environmental challenges;
Principle 8: undertake initiatives to promote greater environmental responsibility; and
Principle 9: encourage the development and diffusion of environmentally friendly technologies.
Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.



— Evaluation from Outside the Company

The Company is incorporated in the following ESG index. (foot note of MSCI)



2021 CONSTITUENT MSCI JAPAN
ESG SELECT LEADERS INDEX

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— Utilization of Supply Chain CSR Management Systems

The Group utilizes supply chain CSR management systems, such as RBA Online,¹ Sedex,² and EcoVadis³ to disclose CSR information. Shin-Etsu Silicones Europe, which participates in EcoVadis, received a gold rating in FY2019.

¹ RBA Online

An online database organized by NPO Responsible Business Alliance (former: Electronic Industry Citizenship Coalition) to manage labor, health and safety, environment, and ethics in the supply chain. Enterprises in the global electronic industry and others join the Responsible Business Alliance.

² Sedex

An online database organized by and named after NPO Sedex for storing and accessing data on ethical and responsible business practices. Enterprises from 150 countries in 28 industries, including food, automobile, cosmetics, and amenity, have joined Sedex.

³ EcoVadis

The supply chain management system operated by the French CSR rating agency, EcoVadis, is used by multinational corporations in 150 countries in North America, Asia, and Europe.

— Management

Shin-Etsu Group Business Principle/Basic ESG Policy



Corporate Governance



Risk Management



Management Corporate Governance

Shin-Etsu Group
Business Principle/
Basic ESG Policy

Corporate Governance

Risk Management

Corporate Governance System ▾	Outside Directors ▾	Outside Audit & Supervisory Board Members ▾	Officers' Remuneration Committee ▾
Internal Control System and Operational Audit ▾	Tax Policy ▾	Operation of Group Companies ▾	

The company considers corporate governance to be an important management task, and focuses on the following points:

- Developing an efficient organization and internal rules
- Ensuring management transparency
- Strengthening internal controls
- Disclosing information timely and accurately

— Corporate Governance System

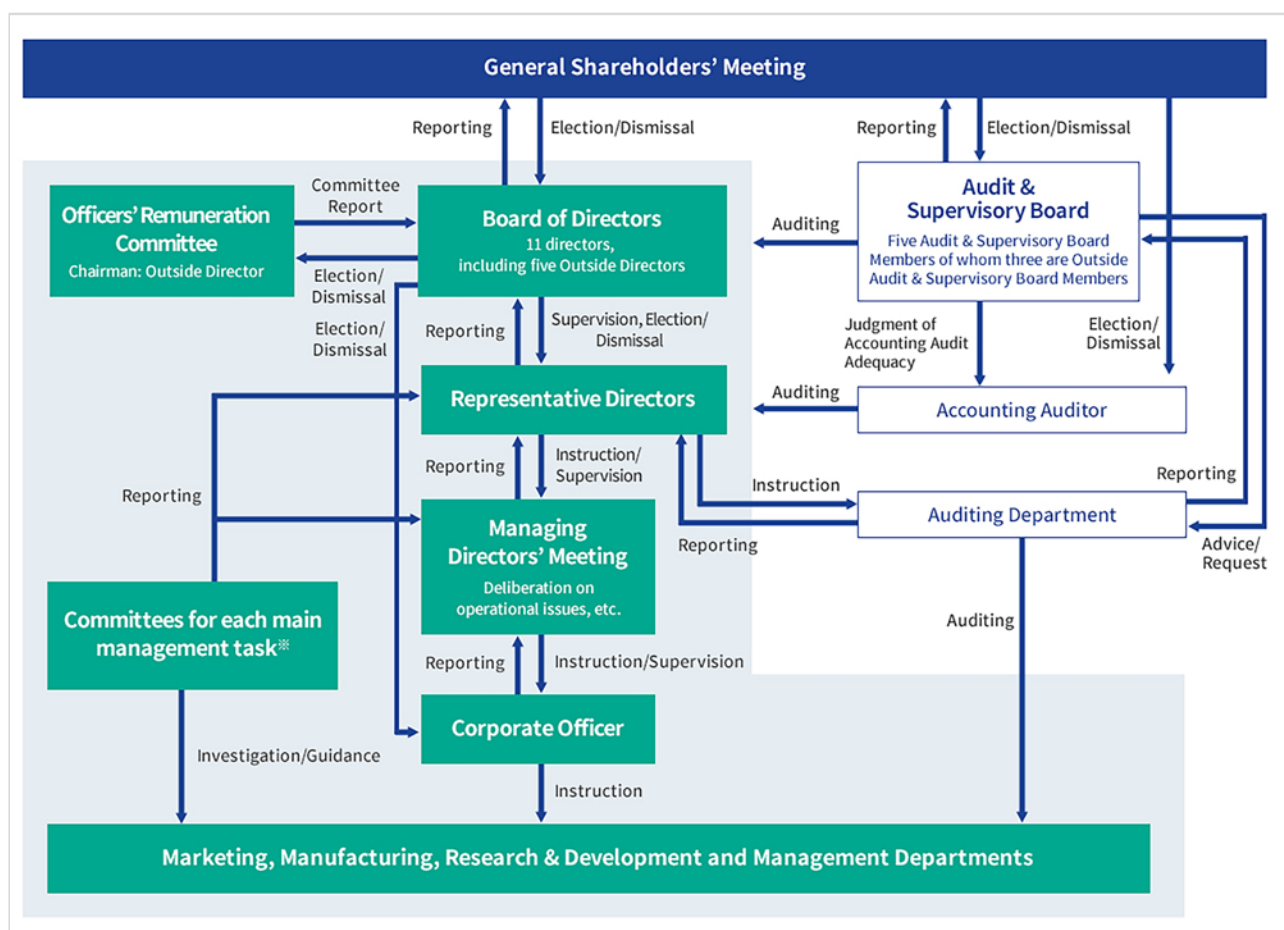
The Board of Directors consists of 11 members, of whom 5 are Outside Directors with a wealth of corporate management experience and exceptional insight.

The company discusses and decides the execution of operations at the Board of Directors' Meeting and the Managing Directors' Meeting, which are each held at least once a month. The Board of Directors sets out the basic principles of the company, and deliberates and makes decisions regarding key aspects of company operations in accordance with the Companies Act, the company's articles of incorporation, etc. Meanwhile, the Managing Directors' Meeting makes deliberations and decisions on a variety of other operational issues.

In addition, we listen to individual opinions from Outside Directors on the overall effectiveness of the Board of Directors on an annual basis, and the Outside Directors evaluate whether our Board of Directors has maintained its effectiveness. This also allows us to obtain valuable opinions on sustainable development, such as collection of information on climate change and other environmental issues, the importance of risk analysis, organizational arrangements to respond to social changes, and the promotion of women etc. As stated above, the Board of Directors is functioning properly. In addition, the results of the self-evaluation and analysis of the Board of Directors show that the effectiveness of the Board has been maintained as a whole, and that it is fulfilling its functions sufficiently.

The company has adopted an Audit & Supervisory Board system. The Audit & Supervisory Board is composed of 5 members, including 3 Outside Audit & Supervisory Board Members. The Audit & Supervisory Board Members attend the Board of Directors' Meetings, Managing Directors' Meetings, and other important internal meetings. In addition, they audit the business execution of the directors through web-based audits and other investigations of business sites and subsidiaries, and reviewing the reports submitted by the directors and employees on the status of the execution of their duties. The Audit & Supervisory Board Members also receive reports and explanations on financial audits from the accounting auditors and exchange opinions with them on a quarterly basis. Furthermore, they regularly receive reports and explanations regarding the status of internal audits from the Auditing Department and exchange opinions. In addition, Shin-Etsu Chemical has an executive officer.

Corporate Governance System at Shin-Etsu Chemical

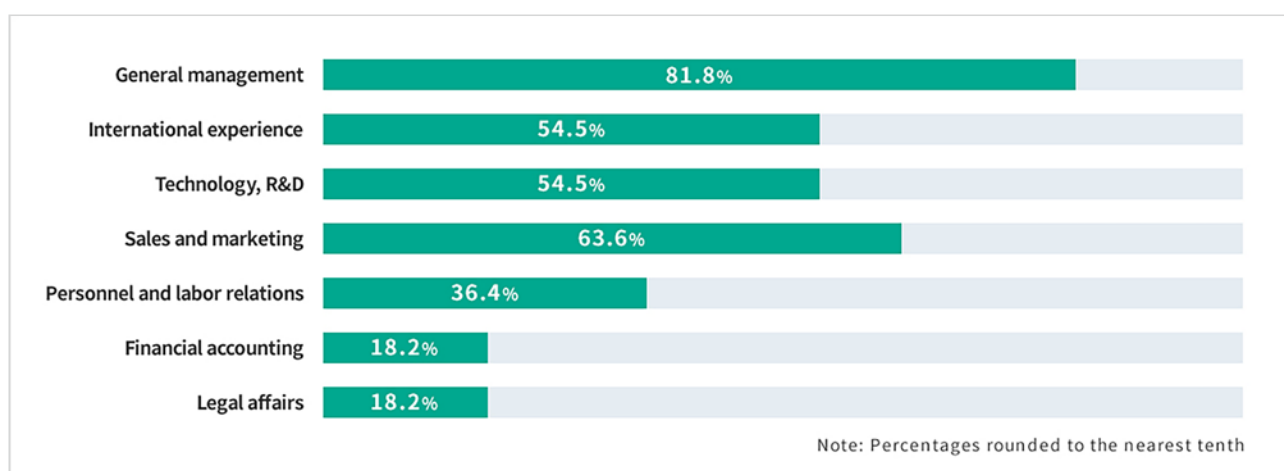


As of June 29, 2021

※ESG Promotion Committee, Risk Management Committee, G Committee, etc.

> Board of Directors

Director Specialties



— Outside Directors

The company welcomes five Outside Directors for the purpose of boosting the advisory and supervisory functions of management from an independent perspective. We have received advice on growth strategies and the enhancement of governance from Outside Directors. We believe that these points are extremely important in order to raise corporate value.

Outside Director List

As of June 29, 2021



Frank Peter Popoff
Former CEO, The Dow
Chemical Company (US)



Tsuyoshi Miyazaki
Former Representative
Director and President,
Former Representative
Director and Chairman,
and current Advisor,
Mitsubishi Logistics
Corporation



Toshihiko Fukui
Former Governor, the
Bank of Japan;
President, The Canon
Institute for Global
Studies;
Outside Director,
Kikkoman Corporation



Hiroshi Komiyama
Former President, The
University of Tokyo;
Chairman, Mitsubishi
Research Institute, Inc.



Kuniharu Nakamura
Chairman, Sumitomo
Corporation;
Outside Director, NEC
Corporation

— Outside Audit & Supervisory Board Members

The company appoints three Outside Audit & Supervisory Board Members for the purpose of boosting advisory and supervisory functions on management from an independent perspective. They audit the company's management as experts in their respective fields or from a broad point of view based on their corporate management experiences. Audits by the Outside Audit & Supervisory Board Members contribute to the company's compliance system.

Outside Audit & Supervisory Board Member List

As of June 29, 2021



Yoshihito Kosaka
Certified Public Accountant;
Certified Public Tax Accountant;
Representative Partner,
HIYU Certified Tax Accountants' Corporation;
Outside Audit & Supervisory Board Member, ASTMAX Co., Ltd.;
Outside Audit & Supervisory Board Member, OXIDE Corporation



Kiyoshi Nagano
Former Representative Director, Chairman, and President, former JASDAQ Securities Exchange, Inc.;
Outside Director, LEC Inc.



Mitsuko Kagami
Lawyer, Kagami Law Offices;
Outside Director, Medipal Holdings Corporation;
Outside Director, Sotetsu Holdings, Inc.

— Officers' Remuneration Committee

The company established the Officers' Remuneration Committee in 2002 to review and evaluate the transparency and validity in the process of determining Directors' remuneration, nominating candidates for Executives, Directors, and Audit & Supervisory Board Members, and others. The committee consists of four Directors and one Corporate Officer, with Outside Director Frank Peter Popoff acting as the Commissioner.

The committee is convened by regular meetings biannually and conference calls as required. The committee reviews and evaluates the remuneration of Directors, and deliberates on the nomination of candidates for Directors and Audit & Supervisory Board Members, and advises the Board of Directors.

— Internal Control System and Operational Audit

The company has formulated a "Basic Policy on Internal Controls" to help put in place "structures to ensure that the execution of duties by Directors is fully compliant with relevant legislations and the articles of incorporation, and structures to ensure the appropriateness of business operations within the corporate group, which consists of its subsidiaries, this corporation, and other corporate business," as stipulated by the Companies Act and an Ordinance of the Ministry of Justice. Our internal control system is structured and implemented in accordance with the above policy. We review it constantly and endeavor to make it more appropriate and efficient.

Internal operation audits and internal control assessments over financial reporting are handled by the Auditing Department from the viewpoint of legality and rationality of business activities. The results of these audits and assessments are reported to board members, including Outside Directors and Outside Audit & Supervisory Board Members, to strengthen the coordination among the Auditing Department, Outside Directors, and Audit & Supervisory Board Members.

— Tax Policy

In its business principle, the Group states that it strictly complies with all laws and regulations and conducts fair business practices. Each and every Group employee performs their daily work duties sincerely based on this. We believe that one of the Group's contributions to society is paying the appropriate amount of taxes in accordance with local laws and regulations. The total corporate income tax paid in FY2020 was 101.4 billion yen for consolidated companies.

— Operation of Group Companies

The company aims to develop the whole Group by supporting and respecting the autonomy of the Group companies. Group companies are managed based on the "Shin-Etsu Chemical Group Company Operational Regulations." The 97 consolidated subsidiaries conduct prior consultation and report on the following projects.

(1) Prior consultation example

Capital increase or decrease, mergers, dissolutions, and amendments to the articles of incorporation
New business and capital investment plan
Transfer or acquisition of business
Appointment, dismissal, or transfer of officers and seconded executives

(2) Reporting example

Operations review
Financial results
Risk information identified by Group companies

Important information such as deficiencies in internal control Furthermore, by holding meetings that are attended by the presidents of our main Group companies at least once a year, we actively promote the sharing and exchange of information among Group companies.

Related Information

[> Corporate Governance Report](#) 

[> ESG Data](#)

— Management

[Shin-Etsu Group Business Principle/Basic ESG Policy](#)



[Corporate Governance](#)



[Risk Management](#)



Management Risk Management

Shin-Etsu Group
Business Principle/
Basic ESG Policy

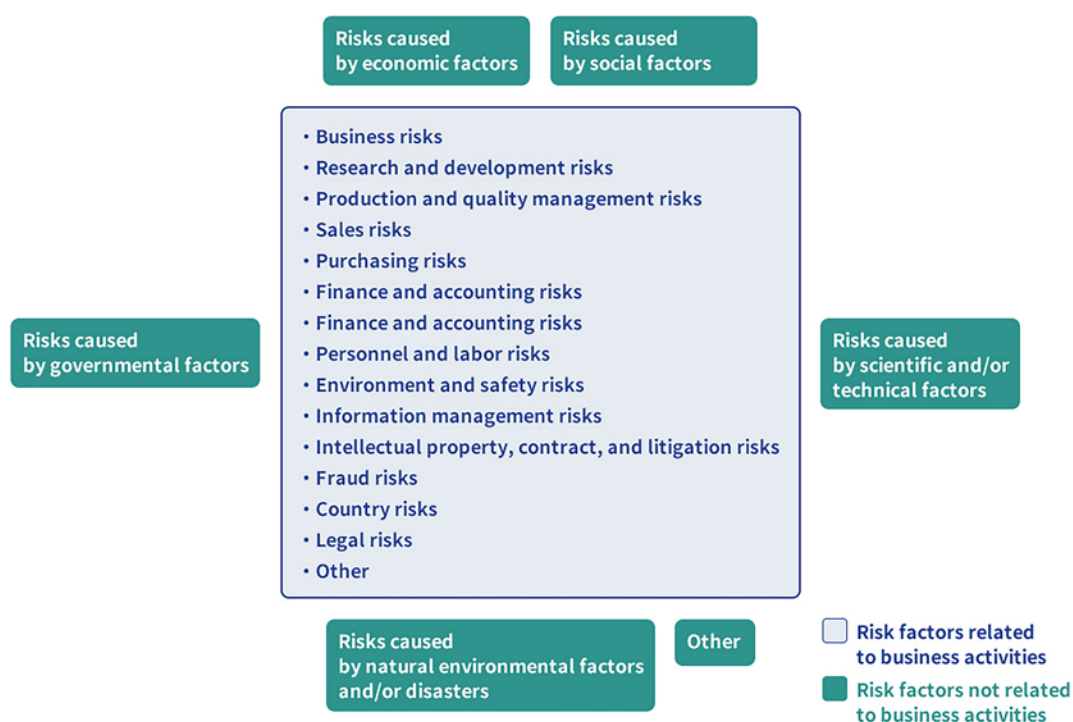
Corporate Governance

Risk Management

— Risk Management Regulations

The Company has established the Risk Management Regulations. Comprehensive risk considered in carrying out business activities in the Company and the Group are specifically defined in a long-term perspective in the regulations. In addition, risk handling methods and a risk management system has been established.

Risks Defined in Risk Management Regulations



— Risk Management Committee

We have the Risk Management Committee chaired by a Corporate Officer of the Company. The committee consists of about twenty members, including directors and general managers of divisions of the Company. The Committee maintains risk management structures, establishes internal regulations, and works to identify the risks arising from the operations of the Company as well as preventing them from occurring. The Committee also promotes group-wide activities such as the development of business continuity planning, providing education and sharing information. The Committee reports directly to the Board of Directors, the Audit & Supervisory Board, and the Managing Directors' Meeting on major issues in risk management. In FY 2020, in addition to the 3 meetings held by the Committee, secretariat held the meetings every month. At the meeting, the Committee discussed risks about production, quality control, and natural environmental disasters.

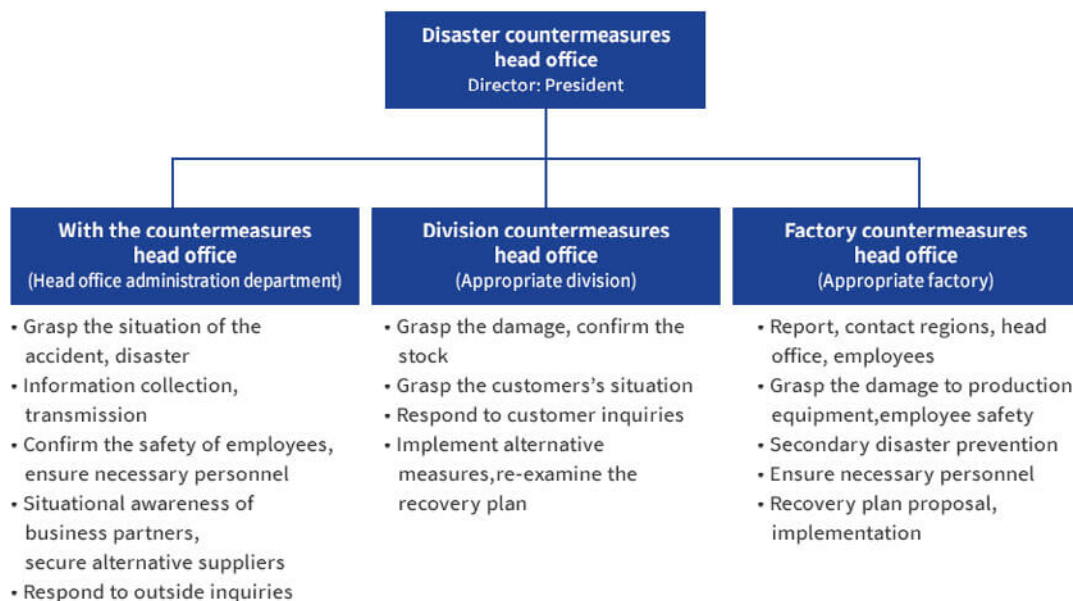
— Verification of Flooding Risk

Climate change, affecting natural phenomena as a whole, is predicted to bring about more frequent localized heavy rain and increased rainfall in the years ahead. Japan is a country faced with the risk of flooding from heavy rain or typhoon due to being situated in a region of high precipitation in the world, with mountainous areas accounting for some 70 percent of its land. In recent years, localized heavy rain unprecedented in scale has led to serious flooding cases and sediment disasters in parts of the country every year. In 2019, overflowing of the Abukuma River caused flooding damage to a plant of a Shin-Etsu Group company in Fukushima Prefecture, forcing the plant to go out of operation. In the event of a manufacturing plant of the Company or a Shin-Etsu Group company suspending production due to a flooding or sediment disaster, ceasing to supply products, it will affect our customers. To prevent such a scenario from occurring, we reverified the risk of flooding and sediment disaster for manufacturing plants in Japan by using the latest hazard maps released by municipalities, and took measures. Moreover, starting from 2021, we began to examine our suppliers' risk of flooding.

— Business Continuity Plan and handling in Emergencies

The Group offers a number of products with high market share not only in Japan but around the world or which used in special applications in state-of-the-art industries. For that reason, if these products cannot be supplied due to an accident or serious disaster such as a massive earthquake or fire, it will have an effect on society. In the Company, each division and each plant is preparing for a disaster and accident and formulates a business continuity plan on the basis of the Companywide Business Continuity Management Regulations. In addition, if a disaster or accident occurs, we will work using the structure shown below. Each of the countermeasures head office and organizations carry out emergency response and recovery support on the basis of pre-defined business standards.

— System and major response operation in the occurrence of a disaster or accident





Training of setting up a disaster response headquarters
(August 2020, Shin-Etsu Chemical Headquarter)

— Management

Shin-Etsu Group Business Principle/Basic ESG Policy



Corporate Governance



Risk Management



— Shin-Etsu Group Key ESG Issues

The foundation of all activities: legal compliance, fair corporate activities	Employees and contractors health and safety	Energy-saving, resource-saving and reduction of the environmental impact
Product quality improvements and product safety control	Promoting CSR procurement and the diversification of supply sources	Respect for human rights, the development of human resources and the promotion of diversity
Respect for and protection of intellectual property	Contribution to industry and social initiatives	Accurate and timely information disclosure and communication with stakeholders

— Specifying Shin-Etsu Group Key ESG Issues

We have been working on a wide variety of activities in order to practice our business principle, which states that "the Group strictly complies with all laws and regulations, conducts fair business practices and creates unrivaled value for society and industry through the provision of key materials and technologies."

The ESG Promotion Committee (former: CSR Promotion Committee) defined the matters as key ESG issues (former: key CSR issues) through the following procedure in FY2015.

— Process of Specifying Key ESG Issues

1. Clarifying key ESG issues

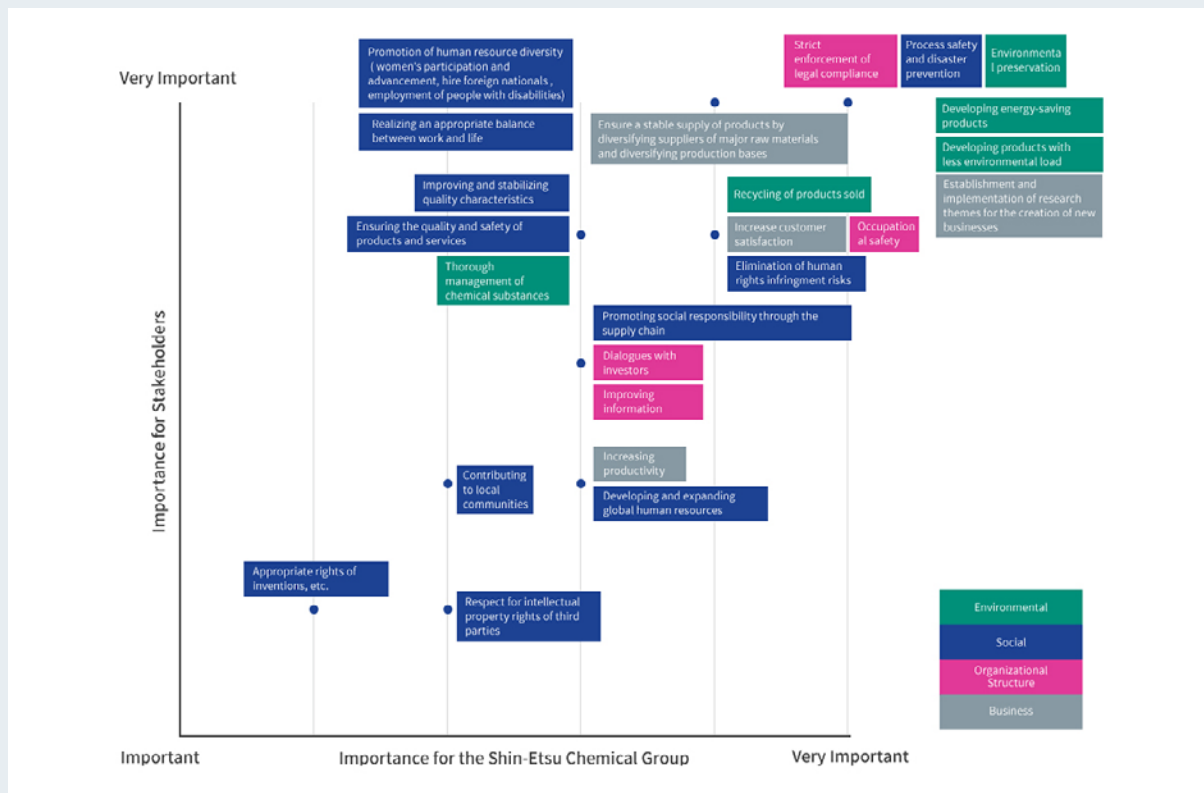
In December 2015, the committee conducted the following investigations for all of the company's departments and major domestic Group companies.

1. The stakeholders for each department and each company are reconfirmed.
2. In reference to ISO 26000 core topics, key ESG issues are listed for each department and each company.
3. The level of importance of each key issue for the Group as well as for stakeholders is scored.

2. Creating a scatter plot of key ESG issues and organizing them

In January 2016, the committee created a scatter plot based on the key issues and the scores submitted by each department and each company. The result showed that the majority of key issues were very important.

The committee organized the listed key issues and created a draft of key ESG issues that reflects the scatter plot.



3. Interviews with Outside Directors

In January 2016, individual interviews were conducted with all Outside Directors based on the prepared proposal. The followings are the suggestions and opinions from the interviews:

1. Compliance with laws and regulations is related to all issues.
2. All listed key ESG issues are equally important to the Group, and it is difficult to prioritize them.
3. The Group should clarify its goals while specifying key ESG issues.

4. Re-examination in the committee and approved by the management

In February 2016, the committee has re-examined the key issues based on the suggestions and opinions of the Outside Directors. The Managing Directors' Meeting, in which all Directors and Audit & Supervisory Board Members are involved in making decisions, also examined the key issues and has declared the items in the figure above to be key ESG issues of the Group in 2015.

In December 2018, the ESG Promotion Committee discussed the key issues and their importance, which had been reviewed by all departments of the company and major Group companies in Japan, and decided to continue addressing the key issues identified in 2015.

The Group will work equally on all of these key ESG issues in no particular order.

Shin-Etsu Group Key ESG Issues

Specifying Key ESG Issues

Risks and Opportunities

The Shin-Etsu Group recognizes the challenges, risks, and opportunities of all key ESG issues and addresses them accordingly.

Key ESG Issues	Awareness of Issues	Major Risks and Opportunities	Policies and Approaches
The foundation of all activities: legal compliance, fair corporate activities	<p>The Group's business principle states that "the Group strictly complies with all laws and regulations, conducts fair business practices and creates unrivaled value for society and industry through the provision of key materials and technologies." Compliance with laws and regulations and fair corporate activities are the foundation of all of our activities.</p> <p>We are working on the long-term development of the Group by not only legal compliance, but also the efforts of each employee to engage in their daily work with a strong sense of ethics as a code of conduct.</p>	Risks <ul style="list-style-type: none"> • Impact of legal violations and improprieties on corporate management. • Damage to corporate value due to loss of trust from society. 	Policy <p>The Group will fully comply with all laws and regulations and conduct business fairly.</p>
		Opportunities <ul style="list-style-type: none"> • Ensuring thorough legal compliance and fair corporate activities leads to: <ol style="list-style-type: none"> (1) Formation of the foundation of corporate value (2) Elimination of risks (3) Building of customer trust and expansion of business opportunities (4) Hiring and retaining of excellent human resources 	Basic Approach <ul style="list-style-type: none"> • Demand thorough compliance awareness among officers and employees through training, etc. • No provision of unfair benefits or demands thoroughly with the aim of preventing corruption • Regarding the prevention of bribery, ensure No provision of unfair benefits or demands thoroughly, and establish internal rules at each overseas group company • Cutting ties with anti-social forces • Compliance with sound business practices with suppliers and service providers • Support for the "Declaration of Partnership Building"

Employees and contractors health and safety	<p>The Group places top priority on safety. For that, we have created a work environment in which employees can work safely and comfortably. The operations without accidents and disasters protect employees, fulfill our responsibilities as a supplier to customers, and lead to the sustainable development of the company. In recent years, many natural disasters have occurred, and we are addressing them as an important issue.</p>	Risks	Policy
		<ul style="list-style-type: none"> • Impact of accidents and environmental problems on local communities and employees. • Damage to equipment caused by typhoons, earthquakes, or other natural disasters. • Impact of an infectious disease outbreak on operations. 	<p>The Group will work to create a comfortable and safe workplace with the goals of achieving "zero accidents" and "zero lost-time accidents."</p>
Energy-saving, resource-saving and reduction of the environmental impact	<p>We recognize that specific measures to combat climate change, the efficient use of limited resources, and a circular economy¹ are key issues that companies face. The Group is committed not only to contributing to the global environment, but also to enhancing our competitiveness and achieving sustainable development through efforts to conserve energy, effectively use resources, and reduce the environmental impact of our manufacturing processes.</p> <p>¹ Circular economy Economic activities to recycle and circulate existing resources, such as converting waste after use into resources for another business</p>	Opportunities	Basic Approach
		<ul style="list-style-type: none"> • Implementing measures to prevent accidents and developing new production processes enable the creation of a safe working environment and the improvement of stable production and higher productivity • Hiring and retaining excellent human resources • Continuing operations, shutting down operations, and resuming operations safely by designing the plant in anticipation of a natural disaster and taking measures against risks • Promoting employee health, achieving a work-life balance, and cultivating a sense of motivation and fulfillment in work 	<ul style="list-style-type: none"> • Safety education for employees through disaster prevention drills and workshops • Environmental control and safety audits • Improvement of the workplace environment and promotion of employees' health
Energy-saving, resource-saving and reduction of the environmental impact	<p>We recognize that specific measures to combat climate change, the efficient use of limited resources, and a circular economy¹ are key issues that companies face. The Group is committed not only to contributing to the global environment, but also to enhancing our competitiveness and achieving sustainable development through efforts to conserve energy, effectively use resources, and reduce the environmental impact of our manufacturing processes.</p> <p>¹ Circular economy Economic activities to recycle and circulate existing resources, such as converting waste after use into resources for another business</p>	Risks	Policy
		<ul style="list-style-type: none"> • Additional costs of stricter regulations related to greenhouse gas emissions • Price increases and difficulty in procuring raw materials for the quantity needed • Increased water risks, such as water depletion and flooding 	<p>The Group will further promote energy conservation and the effective use of resources, and work to resolve a variety of environmental issues for the future of the Earth.</p>
Energy-saving, resource-saving and reduction of the environmental impact	<p>We recognize that specific measures to combat climate change, the efficient use of limited resources, and a circular economy¹ are key issues that companies face. The Group is committed not only to contributing to the global environment, but also to enhancing our competitiveness and achieving sustainable development through efforts to conserve energy, effectively use resources, and reduce the environmental impact of our manufacturing processes.</p> <p>¹ Circular economy Economic activities to recycle and circulate existing resources, such as converting waste after use into resources for another business</p>	Opportunities	Basic Approach
		<ul style="list-style-type: none"> • The constant challenge of technological innovation leads to the enhancement of "manufacturing ability". • Increasing competitiveness by conserving energy and resources, reducing environmental loads, and improving productivity • Increasing the demand for products that contribute to the environment • Developing technologies that recycle water, thus contributing to business continuity 	<ul style="list-style-type: none"> • Promoting the reduction of environmental impact • Waste reduction • Pollutant countermeasures • Response to climate change • Resource recycling • Water resource conservation and water pollutant elimination • Conservation of biodiversity initiatives

Product quality improvements and product safety control	<p>The Group is working to achieve "zero quality problems."</p> <p>The superior quality of general-purpose products as well as high-value-added products will lead to non-price competitiveness. In order to ensure a stable supply of products, it is essential that the sales, research, production, quality assurance, and shipment departments fulfill their respective roles. In addition, not only in terms of characteristics, but also in terms of environmental and health safety is an important factor for product quality.</p>	Risks <ul style="list-style-type: none"> • Loss of trust due to product quality issues • Direct or indirect impacts on product safety 	Policy <p>The Group will stably provide high-quality products to customers.</p>
		Opportunities <ul style="list-style-type: none"> • The track record of continuing to deliver products of the promised quality on time will lead to increased customer trust. • Sincere efforts to ensure product safety and accumulation of achievements will lead to the trust of customers and society. 	Basic Approach <ul style="list-style-type: none"> • Quality control • Quality audits and support • Product safety control • Promote automation of quality inspections and assurance (reduce personnel involvement) • Verification of the statistical validity of inspection variations and standard ranges
Promoting CSR procurement and the diversification of supply sources	<p>Environment issues and human rights infringement by raw material suppliers are important management risks. We have been working on CSR procurement more than ever before, and we check the fairness of our suppliers' activities based on our CSR Procurement Guidelines. We also recognize that the stable procurement of high-quality raw materials at reasonable prices leads to stable production and high-quality products.</p>	Risks <ul style="list-style-type: none"> • Impact from not being able to procure raw materials, such as discontinuation of manufacture and shipment delay to customers • Problems arising in the supply chain 	Policy <p>The Group will build a supply chain to conduct fair procurement and to consider the environment.</p>
		Opportunities <ul style="list-style-type: none"> • Diversifying suppliers enable stable procurement, purchasing at optimal prices, and procurement of raw materials through fair transactions • Thorough CSR procurement will lead to the trust of customers and society 	Basic Approach <ul style="list-style-type: none"> • Create "Shin-Etsu Group CSR Procurement Guidelines" and revise them as appropriate • Ensuring compliance with subcontracting laws by attending seminars and conducting internal audits • Implementing initiatives to eliminate the use of conflict minerals • Implementing the supplier CSR procurement survey • Participation in RSPO "Roundtable on Sustainable Palm Oil"

Respect for human rights, the development of human resources and the promotion of diversity	<p>The Group respect for human rights as the basis for all business activities. Amidst rising global interest in human rights, it is important to comply with this policy and respect the human rights of the Group and all stakeholders. Furthermore, we believe that the development and diversification of human resources is indispensable for the growth of our business and the sustainable development of the Group.</p>	Risks	Policy
		<ul style="list-style-type: none"> • Occurrence of human rights infringements in the Group's business activities and supply chain • Inconsistent effectiveness of human resource development through on-the-job training depending on the department • Negative impact of performance-based operations, which are closely related to human resource diversity 	<p>The Group will respect human rights in all business activities, and promote the development and diversity of human resources.</p>
		Opportunities	Basic Approach
		<ul style="list-style-type: none"> • Recruitment and stable employment of talented people through business activities based on respect for human rights • Training employees with excellent practical skills through on-the-job training • Providing vitality with a corporate culture in which employees set their own goals and take on the challenge of achieving them • Providing equal opportunities and creating a performance-based evaluation system, thus enabling the recruitment, development, and selection of capable personnel, which leads to business growth and the cultivation of new businesses 	<ul style="list-style-type: none"> • Supporting employee growth through a training system • Increasing employee motivation through a performance-based personnel evaluation system and equal opportunities • Promoting diversity • Enhancing the work-life balance system • Implementing human rights due diligence
Respect for and protection of intellectual property	<p>The Shin-Etsu Group believes intellectual property such as products and technologies developed in-house are important information assets and they need to be controlled strictly. At the same time, we think it is important to respect the intellectual property of other entities. We are adequately controlling information in our possession such as intellectual property, business information, and technology information, and are taking utmost care for measures to counter potential information leakage and cyberattack incidents.</p>	Risks	Policy
		<ul style="list-style-type: none"> • The adverse effect on product sales due to infringement of our intellectual property • Restrictions on our product sales and business due to the patents of other entities • Impact of cyber-attacks on production, sales, and R&D activities • Loss of trust in the company due to information leakage 	<p>The Group will protect and respect intellectual property and manage information assets appropriately and strictly.</p>
		Opportunities	Basic Approach
		<ul style="list-style-type: none"> • Promoting product development and unique manufacturing methods by protecting and utilizing our intellectual property • Contributing to the development of industry and the society by publishing inventions • Implementing technology innovation and operational reforms by utilizing digital technologies while thoroughly protecting and managing information assets and taking measures against cyber attacks 	<ul style="list-style-type: none"> • Intellectual property management • Initiatives for information asset management • Protection of personal information • Initiatives for cyber security

Contribution to industry and social initiatives	<p>In addition to obtaining the understanding of local communities, it is important to develop together with local communities in order to conduct business activities, including manufacturing at our plants. To this end, we are conducting various social contribution activities, such as volunteer activities, at our plants and offices around the world.</p> <p>At the same time, we support to resolve global issues that cannot be addressed by the Group alone, such as by providing ongoing donations to the UN's refugee support activities.</p>	Risks	Policy
		<ul style="list-style-type: none"> • Loss of trust from local communities due to social contribution activities not meeting local needs • Impact on the world development due to the delay in achieving a sustainable world that the SDGs aim to achieve 	The Group will participate in a variety of activities in local communities and work to resolve global issues.
Accurate and timely information disclosure and communication with stakeholders	<p>The Group recognizes that it is important to gain an accurate understanding of its business and management by disclosing information and communicating with stakeholders. At the same time, we also understand the importance of incorporating the opinions of our stakeholders into our management. We continue to pursue these goals and strive to achieve sustainable growth and increase corporate value.</p>	Opportunities	Basic Approach
		<ul style="list-style-type: none"> • Creation of employment opportunities, stable employment and tax payment due to business stability • Building relationships of trust with the local community through dialogue and continuous activities • Contributing to a better world by addressing SDG issues through business operations 	<ul style="list-style-type: none"> • Contribution to SDGs goals and targets • Fundraising for the U.N. World Refugee Day • Summer school for elementary school students • Traffic safety activities • Donation of protective clothing and antiseptic solution to local medical institutions • Social contribution activities at overseas Group companies
		Risks	Policy
		<ul style="list-style-type: none"> • Impairment of corporate value through the non-disclosure and inadequate disclosure of information • Loss of trust from stakeholders and the society due to failure to fulfill accountability 	The Group will continue to hold dialogue with stakeholders at every opportunity.
		Opportunities	Basic Approach
		<ul style="list-style-type: none"> • Creating a fair market evaluation and improving corporate value • Earning the trust of stakeholders and the society 	<ul style="list-style-type: none"> • Appropriate and timely disclosure of company information • Communication with stakeholders • Dialogue with mass media including conference calls with analysts and investors after the announcement of financial results • Holding an online exhibition to prevent infection with the COVID-19

— Specifying Key ESG Issues

Specifying Key ESG Issues >

Risks and Opportunities >

— Performance and Outcome

The foundation of all activities: legal compliance, fair corporate activities

- legal compliance, fair corporate activities
- Initiatives Aimed at Preventing Corruption
- Export Control
- Cutting Ties with Anti-social Forces

Employees and Contractors Health and Safety

- Occupational Safety
- Process Safety and Disaster Prevention Plan
- Education and Drills
- Environmental Control and Safety Audits
- Health Considerations

Energy-Saving, Resource-Saving and Reduction of the Environmental Impact

- Environment Management
- Response to Climate Change
- Resource Saving
- Biodiversity and Pollutant Countermeasures

Product Quality Improvements and Product Safety Control

- Product Quality Improvements and Product Safety Control
- Quality Audits and Support
- Product Safety Control

Promoting CSR Procurement and the Diversification of Supply Sources

- Basic Procurement Policy
- Compliance with the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors
- Sustainable Procurement
- Procurement Audit
- Control of Chemical Substances Used as Raw Materials

Respect for human rights, the development of human resources and the promotion of diversity

- Respect for human rights
- Human resource development
- Creating a comfortable working environment

Respect for and protection of intellectual property

- Intellectual Property Management
- Initiatives for Information Asset Management
- Protection of Personal Information
- Cyber Security

Contribution to industry and social initiatives

- Contribution to industry and social initiatives

Accurate and timely information disclosure and communication with stakeholders

- Information Disclosure
- Communication with Stakeholders

The foundation of all activities: legal compliance, fair corporate activities

Ensuring Full Compliance Awareness	Employee Initiatives	Initiatives Aimed at Preventing Corruption	Export Control
Cutting Ties with Anti-social Forces			

— Ensuring Full Compliance Awareness

The Group emphasizes the importance of compliance with laws and regulations in the business principle and annual management objectives, and carries out corporate activities in full compliance with laws and regulations. In the event of promulgation of or amendments to legislation pertaining to corporate activities, the Legal Department takes the central role of issuing internal bulletins and sharing their knowledge of these changes. In addition, in order to promote understanding of important laws and regulations, we posted explanatory articles in our company newsletter, and invited outside lecturers to give lectures to our employee. We held the online seminar relating to export control regulations in America and China in February 2021.

All of the officers and employees have submitted a compliance pledge to the company. We have also established disciplinary measures to deal with any inappropriate action that may occur. Furthermore, officers and employees can consult with and report to the Compliance Consultation Office if they discover any violation of the law, regulations, ethical codes, or the company's regulations, including Anti-Bribery Regulations, or if they experience acts of harassment. The Office will then carry out a detailed investigation in response to the information received, and take the necessary corrective actions. Confidentiality will be maintained for consulters and whistleblowers and there will be no unfavorable treatment as a result of consulting and reporting an incident.

— Employee Initiatives



Shin-Etsu
Chemical Head
office
**Mr. YA, Legal
Department**

Compliance with laws and regulations that form the basis of corporate activities

1. Please tell us about your job.

The Legal Department at the Company puts much effort into preventive legal steps, which refers to readying ourselves in advance to avoid causing any legal problem, instead of subsequently dealing with any problem that has occurred. Accordingly, I get involved from the designing stage for an agreement that business division or an administrative department intends to enter into. If there is any issue associated with law or agreement, I work with the business division to ponder a possible solution. Furthermore, as the security export control committee secretariat, I am in charge with reviewing export-related transactions and conducting internal audits. For FY 2020, we carried out researches on export regulation by the U.S. and China.

2. How does the Legal Department share, thoroughly enforce, and educate employees about legal compliance?

We conduct the following multifaceted activities:

- Implementation of in-house trainings (rank-based trainings, etc.)
- Notification of revisions to laws and regulations and posting them on the Intranet
- Publication of articles related to laws and regulations in company newsletters
- Implementation of online lectures
- Regular internal lectures by lawyers

3. Please tell us about legal compliance-related initiatives done by the Legal Department.

The Legal Department worked to notify and disseminate law revisions, kept various regulations in order and held study sessions. For the FY 2020, on February 18, 2021, the department held an internal seminar on the theme of developments in export regulation by the U.S. and China (online seminar), a security export control seminar, which was attended by over 100 persons including those from Shin-Etsu Group companies.

4. What are your thoughts on legal compliance going forward?

For example, antitrust laws apply universally to all departments, unlike business laws that apply only to certain business departments. In addition to sales departments, it involves a variety of corporate activities, including purchasing, R&D, and business combinations¹. In order to comply with these regulations, it is important to share the content of the regulations throughout the company. I will continue to share important laws and regulations with the company.

¹ Business combinations

Organizational restructuring activities such as mergers, corporate splits, share exchanges, and share transfers

— Initiatives Aimed at Preventing Corruption




The company has created "Anti-Bribery Regulations" and prohibits actions that involve the unfair transfer of profit from or to parties, and has received compliance pledges from all officers and employees. Simultaneously, we prevent the provision of unfair benefits or demands thoroughly with respect to our customers, domestic or foreign government officials, and suppliers. The status of compliance with ethical standards is also included in personal evaluations, and we carry out regular internal audits for corruption, embezzlement, and bribery.

Supporting GCNJ's "Tokyo Principles for Strengthening Anti-Corruption Practices"

The Group's business principle includes "observing all laws and regulations as well as conducting fair corporate activities," and we are working to prevent corruption, including bribery. The Global Compact Network Japan's Tokyo Principles for Strengthening Anti-Corruption Practices correspond with the Group's current policy and initiatives for preventing corruption, so we immediately decided to support them and became a signatory in February 2018.

We will continue to make it our principle to comply with laws and regulations and carry out business activities fairly, and work to conduct business in accordance with the Tokyo Principles and our internal anti-corruption regulations.

> GCNJ's "Tokyo Principles for Strengthening Anti-Corruption Practices"
(only available in Japanese) 



GCNJ's "Anti-Corruption Annual Forum 2019"
(September 2019)

Announcing the "Declaration of Partnership Building"

We announced the "Declaration of Partnership Building" in December 2020, agreeing with its concept "Building the mutually beneficial relationships among entirety of the supply chain".

Export Control

From the viewpoint of maintaining world peace and security, the company has created "Security Control Management Regulations" to comply with the Foreign Exchange and Foreign Trade Act and other export-related legislation. The following shows our initiatives based on this program:

- Classification, customer review, and transaction review when exporting products
- Internal audit
- Training officers and employees and providing instructions to Group companies

Cutting Ties with Anti-social Forces

The Group declares in its "Basic Policy on Internal Controls" that the Group shall adopt a firm attitude towards anti-social forces and shall take the measures necessary to cut itself off from any and all associations with them. In accordance with this policy, we developed internal systems under the leadership of the department in charge of managing these issues, and signed memorandums and letters of confirmation regarding the exclusion of anti-social forces with customers and suppliers. In addition, we are working closely with external specialized agencies.

Related Information

> ESG Data

Occupational Safety ▾	Process Safety and Disaster Prevention Plan ▾	Education and drills ▾	Environmental Control and Safety Audits ▾
Health Considerations ▾	Employee Initiatives ▾	Targets and Results ▾	Reporting of Accidents and Lost-Time Accidents ▾

— Occupational Safety

Close-calls Incidents Topics

2021.01.29 Updated of Close-Call (Hiyari-Hatto) Incidents
 2020.07.31 Updated of Close-Call (Hiyari-Hatto) Incidents
 2020.01.31 Updated of Close-Call (Hiyari-Hatto) Incidents
 2019.07.31 Updated of Close-Call (Hiyari-Hatto) Incidents
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 2018.01.31 Updated of Close-Call (Hiyari-Hatto) Incidents
 2017.07.31 Updated of Close-Call (Hiyari-Hatto) Incidents
 2017.01.31 Updated of Close-Call (Hiyari-Hatto) Incidents

We create the "Shin-Etsu Group Environmental Safety Management Plan" every year in accordance with the Responsible Care Codes¹ and set numerical goals.

Each of the Group's plant in and outside Japan clarifies every single risk that can cause any kind of injury or illness and works hard on risk assessment activities intended to mitigate risks.

In the event of discovering any risk, we take various safety measures such as providing workers with individual protective tools, measures to prevent entry into dangerous areas and posting of off-limits signs in dangerous areas, and locking out² and tagging out³ machines and equipment. We also take measures including attaching safety devices to machines and equipment, and installing fail-safes,⁴ foolproof mechanisms,⁵ interlocks,⁶ and protective walls. In addition, we practice KY⁷ hazard prediction activities and make sure to indicate and name all relevant equipment prior to working in order to reconfirm safety.

Furthermore, the workers take measures against unsafe areas by regularly gathering information on close-call incidents from workers who experienced them. At the same time, we share our risk information and prevent similar accidents by disclosing this risk information internally and externally.

¹ Responsible Care Codes

Six principle areas are addressed when implementing Responsible Care: Responsible Care Codes consist of seven codes, composed of six codes for different activity areas, namely, environmental preservation, disaster prevention, occupational health and safety, distribution safety, chemical and product safety, and dialogue with the public, and the Management System Code, designed to operate all the above commonly as a system.

² Lock out

Blocking the power source by locking the switches of machines and equipment so that they cannot be operated.

³ Tag out

Attaching tags to areas where machines and equipment have been locked out, which signifies that operating the machines and equipment is prohibited until the tags are removed.

⁴ Fail-safe

Controlling equipment and systems so that they always operate safely if a problem occurs due to an error or malfunction.

⁵ Foolproof

Taking measures in advance so that safety is ensured even if workers operate machines and equipment incorrectly.

⁶ Interlock

A concept for safety devices and mechanisms in which machines and equipment do not work unless certain conditions are met.

⁷ KY

Hazard prediction activities in which workers check about safe working methods in order to prevent the occurrence of a disease or injury that could potentially occur during the task, and securely apply the methods.

— Process Safety and Disaster Prevention Plan

The prevention of serious accidents is a top priority in the Group, and we continue to work on a variety of safety and disaster prevention activities. Countermeasures are taken for dangerous areas identified through process risk assessments, and pipes and equipment are maintained and managed, mainly through scheduled maintenance.

Since FY2013, we have worked to enhance safety management by performing risk assessments and implementing effective safety measures, particularly for abnormal plant conditions that we have predicted.

The company has joined the Japan Industrial Safety Competency Center since its inauguration in FY2012. Each plant uses the Safety Evaluation System of the center to further improve the situation and works even harder on the Process Safety and Disaster Prevention Plan.



Risk assessment workshop (October 2020, Shin-Etsu Chemical Naoetsu Plant)

Results of safety management activities(Shin-Etsu Chemical)

	FY2018	FY2019	FY2020
Number of improvements	8,909	10,966	7,807

— Education and Drills

To keep plant operations constantly safe, it is important for each employee working at our Group's operation sites to improve their skills and knowledge and be aware of danger.

For that purpose, we provide safety education on the risks of handling materials and processes and simulate possible dangers for employees and contractors to experience. In addition, we work on passing down the skills to operate manufacturing equipment to the next generation of employees. We work to give each employee thorough safety awareness by creating a workplace culture in which operation processes and rules are observed.

We plan and conduct emergency drills for abnormal situations such as major earthquakes and fires.



Plant general disaster prevention drill
(October 2020, Shin-Etsu Chemical
Takefu Plant)



Autumn general disaster prevention
drill
(November 2020, Shin-Etsu Chemical
Gunma Complex)



Fire extinguishing training for new
employees
(November 2020, Shin-Etsu Chemical
Gunma Complex)

— Environmental Control and Safety Audits

In order to confirm that activities such as environmental conservation, occupational safety and health, and process safety and disaster prevention plan are carried out as planned, the Group conducts an internal audit at domestic and overseas operation sites. In FY2020, web audits were conducted at 12 domestic and overseas operation sites. The results of audits are reported to the top management.

In FY2020, the audit focused on following;

- The results of examinations of measures to deal with serious risks related to plant operations.
- The results of self-evaluation based on the safety evaluation check list.
- The implementation status of activities to improve each result above, and future activity plans.



Comprehensive environmental and safety audit
(November 2020, Shin-Etsu Handotai Shirakawa Plant)

— Health Considerations

We are conducting any measures to prevent the development of possible diseases such as encouraging employees to take health checks, offering health counseling on lifestyle diseases, and promoting measures on mental health and activities for health promotion and fitness. In addition, we are implementing measures for infectious diseases, including COVID-19.

Our head office and branch offices have a Health Committee, and each plant has a Safety and Health Committee. The committees work to improve the workplace environment and promote the workers' health with advice and information from industrial physicians. We also have special programs such as physical fitness checks and seminars to help workers maintain and improve their physical conditions.

Furthermore, we offer an outside Family Health Consultation Service, which can be used by our workers and their family, with our health insurance union and an insurance company. It is available 24 hours a day.



Health lecture
(June 2020, Shinano Electric Refining Co., Ltd.)



Health lecture training
(October 2020, Shin-Etsu Chemical Takefu Plant)

— Employee Initiatives



Shin-Etsu
Chemical Takefu
plant Ms. MY,
public health
nurse

Ensuring that all employees can work in good health Shin-Etsu Chemical Takefu Plant

1. What actions are taken at the plant's medical office?

The operations of the medical office include providing emergency response, first-aid, medical interviews, various medical check-ups such as explaining the results, and immunization. The Shin-Etsu Chemical Takefu Plant has two nurses in the medical office. A nurse from the hospital in the region where industrial physicians work is stationed at the plant, and an industrial physician visits the plant once a week to conduct examinations. A psychosomatic doctor also comes twice a month to provide mental consultation.

2. Please tell us about your business.

At the medical office of the Shin-Etsu Chemical Takefu Plant, I am in charge of the health management of employees of this plant and the Group companies in the neighborhood. I perform follow-up surveys of reexaminations after medical checkups, health guidance, health education, interviews with overtime workers, and mental consultations. For follow-up surveys of reexaminations, I continue doing them until I receive the results.

I am also in charge of the health education and fitness classes for new employees. In FY2020, online class was held by fitness instructors under the theme of "Lifestyle-related diseases and arteriosclerosis." To prevent diseases, I distribute leaflets regarding exercise, rest, and non-smoking, and also work with nutritionists to determine seasonal themes to place on company cafeteria tables that provide health information to raise employees' awareness of health management. In addition, we are responsible for raising awareness about COVID-19, such as hand washing, disinfection, cough etiquette, ventilation, as well as for checking people with high fever.

3. Please tell us about future issues related to employee health management and your plans to focus on these issues.

To ensure that our employees can work energetically, I am thinking of enhancing our disease prevention classes, and nutrition, fitness, and smoking cessation activities. I would like to work closely with each and every employee so that they can continue to work while treating their illness.

— Measures for COVID-19

We implement a variety of measures to protect employees and their families from COVID-19. In February 2020, a COVID-19 countermeasures group headed by the president was established at the Shin-Etsu Chemical Head Office, and a series of measures to prevent the infectious disease from spreading in response to the ever-changing situation was sent throughout the company. In each region, we established a local group to take measures against COVID-19 and implement measures to prevent infection and to maintain operations in accordance with each region, based on the notification from the Shin-Etsu Chemical Head Office. We implement company-wide measures thoroughly by asking employees to measure their body temperatures before going to work, wear a mask when commuting and at work, and disinfect their fingers; prohibiting business trips; utilizing telephone and online conferences; and checking the body temperature of visitors, etc. In addition, we pushed for workers to work from home in response to the request by the national government. Each plant takes measures to ensure thorough disinfection, stagger working hours for office workers, and make people use the cafeteria and break rooms at different times and maintain distance when using them.



Partition in the cafeteria
(May 2020, Naoetsu Plant)



Vinyl curtains at office reception desks
(May 2020, Takefu Plant)

— Targets and Results

Every fiscal year, the Group creates an environmental and safety management plan based on the Responsible Care Codes. The entire Group works on key issues such as the prevention of major disasters, including explosions and fires, and industrial accidents according to the prepared management plan.

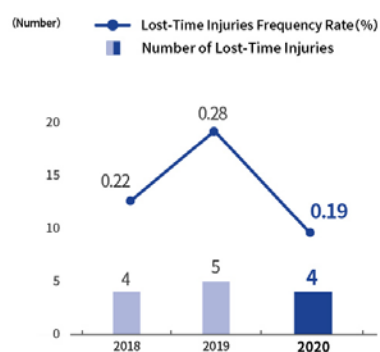
[> Implementation Status, Evaluation, and Planned Implementation Items](#) 

— Reporting of Accidents and Lost-Time Accidents

In FY2020, there were no serious accidents, but there were four lost-time injuries in the Group companies in Japan.

We have analyzed the causes for each accident, eliminated hazardous operations, ensured equipment safety, and promptly implemented appropriate safety measures. We prevent work-related accidents by revising the operation manuals and working to prevent re-occurrence of accidents.

The occurrence of work-related accidents is reported to the directors and department heads at monthly business report meetings.



Number of Lost-Time Accidents and Changes in Frequency Rates
(Shin-Etsu Chemical and domestic consolidated companies*)

* The definition of an occupational accident differs in Japan and overseas, so we do not disclose the accident statistics of overseas consolidated companies. We plan to disclose the information once we have standardized the definition of occupational accident.

Related Information

[> ESG Data](#)

The safety targets and results for FY2020 and safety targets for FY2021 are as listed below.

Item	Priority Issues (Target)	Implementation Status for Fiscal 2020	Evaluation	Planned Implementation Items for Fiscal 2021
Management System	1. Legal compliance	<ul style="list-style-type: none"> Strengthening the Legal Checking System Proper operation management based on relevant laws and regulations 	◎	<ul style="list-style-type: none"> Strengthening the Legal Checking (ongoing) Proper operation management based on relevant laws and regulations (ongoing)
	2. Development and revision of Plant Environment Control and Safety Regulations and Standards	<ul style="list-style-type: none"> Development and revision of Plant Environment Control and Safety Regulations and Standards 	○	<ul style="list-style-type: none"> Development and revision of Plant Environment Control and Safety Regulations and Standards (ongoing)
	3. Continuous improvement of the safety and health management system and improvement of the effectiveness of activities	<ul style="list-style-type: none"> Communication by the president, the plant manager and division heads of their commitment and active involvement Development of good PDCA cycles for the health and safety management system and promotion of effective activities 	◎	<ul style="list-style-type: none"> Communication by the president, the plant manager and division heads of their commitment and active involvement Development of good PDCA cycles for the health and safety management system and promotion of effective activities
	4. Qualitative improvement of environmental safety audits	<ul style="list-style-type: none"> Qualitative improvement of environmental safety audits at affiliated companies in the plant area Active involvement at overseas manufacturing bases as a mother plant through guidance and auditing 	○	<ul style="list-style-type: none"> Qualitative improvement of environmental safety audits at affiliated companies in the plant area (ongoing)
	5. Thorough change management	<ul style="list-style-type: none"> Establishment of regulations and standards for MOC rules. Confirmation of application of MOC rules at the plants and thorough compliance with them 	○	<ul style="list-style-type: none"> Establishment of regulations and standards for MOC rules. Strict application of MOC rules at the plants and thorough compliance with them (ongoing)
	6. Establishment of management infrastructure and fostering of a culture of safety		-	<ul style="list-style-type: none"> Utilization of the Safety Competency Evaluation System and promotion of systematic self-improvement
Process Safety and Prevention Plan	1. Zero serious accident	<ul style="list-style-type: none"> Achieved target of zero serious accident 	◎	<ul style="list-style-type: none"> Zero serious accident
	2. Facility and process safety improvement	<ul style="list-style-type: none"> Continue and enhance the process risk assessment (Limited to facilities and chemical plants where accidents due to explosion fires, or chemical reactions are anticipated) Safety measures for non-routine work and unsafe operations, as well as continuing to consider accident trouble cases Maintenance and utilization of safety basic information Proper operation of alarms and interlocks 	○	<ul style="list-style-type: none"> Continue the process risk assessment (Targeting to operations, facilities and chemical plants where accidents due to explosion fires, or chemical reactions are anticipated) Review of safety measures for non-routine work and unsafe operations (ongoing) Safety general inspections of open-system operations that may lead to serious accidents such as fires in operations that handle flammable liquids and flammable powder Reviewing and utilization of safety basic information(ongoing)
	3. Improvement of facilities and maintenance management	<ul style="list-style-type: none"> Thorough investigation of equipment trouble causes, recurrence prevention and design technology improvement Improvement of equipment maintenance 	○	<ul style="list-style-type: none"> Thorough investigation of equipment trouble causes, recurrence prevention and design technology improvement (ongoing) Improvement of equipment maintenance (ongoing)
	4. Predictions and reliable responses to emergencies	<ul style="list-style-type: none"> Consider estimating and minimizing damage if the worst situations such as serious accidents and massive earthquakes occur Preparation of emergency-response criteria manuals (including troubles, accidents and natural disasters) 	○	<ul style="list-style-type: none"> Consider estimating and minimizing damage if the worst situations such as serious accidents and massive earthquakes occur(ongoing) Preparation of plant emergency-response standards and on-site manuals for major accidents and disasters, and implementation of anticipated drills(ongoing)
	5. Plant security enhancement	<ul style="list-style-type: none"> Strengthen prevention measures against external intruders Provide visitors to the plants with risk information and inform them of evacuation methods if an accident or disaster occurs 	○	-
	6. Safe and stable operation management		-	<ul style="list-style-type: none"> Appropriate daily, monthly, and annual inspections, implementation of operation management, and effective use of data Reviewing and strengthen of response to process abnormal conditions Make sure safety assurance and implementation of reviews during startups (SU) and shutdowns (SD)
Occupational Safety	1. Achieve zero labor accidents requiring an absence of a day or more	<ul style="list-style-type: none"> The Shin-Etsu Group: 4 people Shin-Etsu Chemical: 1 people 	△	<ul style="list-style-type: none"> Achieve zero labor accidents requiring an absence of a day or more
	2. Rate of labor accidents not accompanied by an absence a day or more: 0.5 or less	<ul style="list-style-type: none"> The Shin-Etsu Group achieved its goal with a rate of 0.43 Shin-Etsu Chemical: 0.32 	○	<ul style="list-style-type: none"> Rate of labor accidents not accompanied by an absence of a day or more: 0.5 or less
	3. Human error reduction	<ul style="list-style-type: none"> Prevention of accidents and disasters due to human errors 	○	<ul style="list-style-type: none"> Prevention of accidents and disasters due to human errors (ongoing)
	4. Improve work safety	<ul style="list-style-type: none"> Promoting "zero accident" activities (practiced Hazard prediction activities, pointing and calling, and 5S activities) Activation and promotion of close-call incident proposals and improvement proposals (set promotion goals) Implemented assured horizontal expansion of accident examples of the Group companies Cultivate a safety culture in which rules and manuals are followed 	○	<ul style="list-style-type: none"> Promoting of safety activities (practiced Hazard prediction activities, pointing and calling, and 5S activities) (ongoing) Active improvement of work methods and work environment (ongoing) Implement application of similar process and examination of accident in the Group and other companies (ongoing) Preventing Accidents and Disasters among Middle-Aged and Elderly People Measures to prevent accidents by contacting dangerous areas, equipment etc. Review of factory standards for protective equipment and protective clothing for dangerous or harmful work
	5. Review and reorganize work manuals and ensure strict compliance	<ul style="list-style-type: none"> Implement of planned review and content enhancement of work manual maintenance (routine, non-routine, emergency response etc.) Confirm the compliance of work manuals 	○	<ul style="list-style-type: none"> Implement of planned review and content enhancement of work manual maintenance (ongoing) Confirm the compliance of work manuals (ongoing) Creation of a safe culture that complies with rules and manuals (ongoing)
	6. Work risk assessment	<ul style="list-style-type: none"> Implement work risk assessment based on plans(Central Labor Accident Prevention Association⁵ method or procedure HAZOP⁶) Risk assessment as stipulated in the Industrial Safety and Health Act Risk assessment for dangerous and non-routine work at one's workplace 	○	<ul style="list-style-type: none"> Implement work risk assessment based on plans(Central Labor Accident Prevention Association⁵ method or procedure HAZOP⁶) Risk assessment as stipulated in the Industrial Safety and Health Act Risk assessment for dangerous and non-routine work at one's workplace
	7. Safety measures of construction and non-routine work	<ul style="list-style-type: none"> Clarify work instructions and procedures and implement hazard prediction activities Clarification and solid performance of implementation matters such as construction start permission, safety management during construction, delivery, completion confirmation, etc. Providing safety information to construction contractors, thorough education of plant rules, etc. 	◎	<ul style="list-style-type: none"> Clarification and solid performance of implementation matters such as construction start permission, safety management during construction, delivery, completion confirmation, etc. (ongoing) Providing safety information in writing to construction contractors, thorough education of plant rules, etc. (ongoing) Clarify work instructions and procedures and implement hazard prediction activities for non-routine work (ongoing)
	8. Training and drill promotion	<ul style="list-style-type: none"> Plan promotion of education and training Promote acquisition of qualifications Active introduction of awards and prize systems for voluntary safety activities 	○	<ul style="list-style-type: none"> Plan promotion of education and training (ongoing) Active participation in various safety seminars Promote acquisition of qualifications (ongoing) Active introduction of awards and prize systems for voluntary safety activities (ongoing) Implementation of planned training to acquire important safety skills
	9. Ensuring subcontracting safety	<ul style="list-style-type: none"> Active involvement in safety management at companies to which, as a manufacturer, the Company outsources its operations Implementation of sufficient safety education 	○	<ul style="list-style-type: none"> Active involvement in safety management at companies to which, as a manufacturer, the Company outsources its operations (ongoing) Implementation of sufficient safety education for temporary and contract employees (ongoing)
Occupational health	1. Create and maintain a comfortable workplace environment	<ul style="list-style-type: none"> Implemented working environment measurements and promote working environment improvements based on the results Implement chemical substance handling education and strict wearing of chemical protective equipment as well as confirmation of compliance status for wearing protective equipment Appropriate implementation under the Industrial Safety and Health Law Appropriate reporting, communication, and consultation, as well as promotion of good communication 	○	<ul style="list-style-type: none"> Realization of comfortable working environment Ensuring an appropriate and safe working environment Implementation of appropriate health management Appropriate reporting, communication, and consultation, as well as promotion of good communication(ongoing)
	2. Promote physical and mental health wellbeing	<ul style="list-style-type: none"> Implement concrete guidance, etc. and effective utilization of health check results Appropriate compliance with additional inspection criteria due to regulatory amendments Promotion of specific activities to build mental and physical health 	◎	<ul style="list-style-type: none"> Implement concrete guidance, etc. and effective utilization of health check results (ongoing) Appropriate compliance with additional inspection criteria due to regulatory amendments of Industrial Safety and Health Law, etc. (ongoing) Promotion of specific activities to build mental and physical health (ongoing) Aggressive promotion and thorough implementation of preventive measures for COVID-19, etc.

1. PDCA cycle

One of the method to smoothly carry out management tasks such as production control and quality control in business activities. To improve business operating continually by repeating the four steps such as Plan (P) → Do (D) → Check (C) → Act (A).

2. MOC

Management of change

3. 4M

It is the first letter "M" of four words for man, machines, media and management.

4. 5S activities

It is the first letter "S" of five Japanese words for seiri seiton (organize and order things), seiso (cleaning), seiketsu (cleanliness), and shitsuke (bringing-up).

5. Central Labor Accident Prevention Association

A corporation for the purpose of public interest established in 1979 with the approval of the Minister of Labor (currently: Minister of Health, Labor and Welfare) under the Labor Accident Prevention Group Act. It aims to improve safety and health and to eliminate occupational accidents through promotion of voluntary occupational accident prevention activities by business owners.

6. HAZOP

Hazard and Operability Study. Standard process hazard analysis methods in the chemical process industry.

* Evaluation standards

○: Goal achieved △: Goal basically achieved △: 50% achieved ×: Far from achieved

Energy-saving, resource-saving and reduction of the environmental impact

Environment Management

Response to Climate
Change

Resource Saving

Biodiversity and Pollutant
Countermeasures

— Environment Management

Environment Management

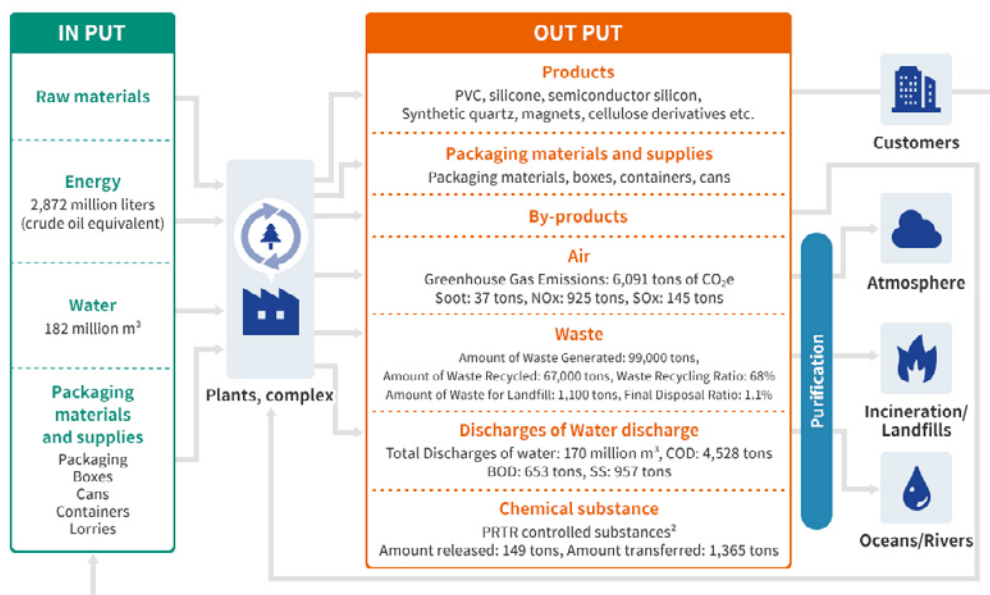
The Group works on energy savings, waste reduction, and chemical substance management as important issues. We create the "Shin-Etsu Group Environmental Safety Management Plan" every year in accordance with the Responsible Care Codes¹ and set numerical goals. The company and all of the plants of our Group companies set goals annually according to this plan and work to achieve them. Annual activity results are reported to the director in charge of the environment control at the Group Environmental Protection Conference.

In order to increase the quality of activities, each plant and the Group companies perform several internal audits a year to check if they have set appropriate goals and the progress that they have achieved. In addition, we also check their activities and achievements through periodical environmental control and safety audits. The audit results are reported to the top management.

Promoting the Reduction of Environmental Impact

The Group constantly works to promote the reduction of environmental impact in the manufacturing stage. Furthermore, we are considering ways to reduce the environmental impact at the product usage stage and to contribute to energy and resource conservation. The Research, Manufacturing, and Sales Departments work together to develop products that are used in various fields, including the manufacturing industry, our daily lives, and the renewable energy industry.

Environmental Impact of Business Activities



1 Responsible Care Codes

Six principle areas are addressed when implementing Responsible Care: Responsible Care Codes consist of seven codes, composed of six codes for different activity areas, namely, environmental preservation, disaster prevention, occupational health and safety, distribution safety, chemical and product safety, and dialogue with the public, and the Management System Code, designed to operate all the above commonly as a system.

2 PRTR controlled substances

462 substances have been identified as Class I designated chemical substances from the Pollutant Release and Transfer Register (PRTR) system in the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management.

※ The scope of reporting has been changed from group companies including Shin-Etsu Chemical and non-consolidated companies to Shin-Etsu Chemical and consolidated companies.

※ For data disclosed from 2021 onwards, we use the CO₂ emission factor of our power suppliers to calculate the amount released.

※ Waste standards and PRTR controlled substances differ from country to country, and these are the figures for the company and Group companies in Japan.

※ The waste recycling ratio indicates the ratio of the amount recycled to the total waste generated.

※ The final disposal ratio indicates the ratio of the amount of landfill waste to the total waste generated.

Targets and Results

The following shows our targets and results for environmental protection and chemical substance management for FY2020 and our targets for FY2021.

[> Target, Implementation Status, Evaluation, and Planned Implementation Items](#)

Environmental Certification

In 1996, Shin-Etsu Chemical Gunma Complex obtained the ISO 14001 certification, becoming the first facility of a major chemical company in Japan to achieve such a certification. The Group has continued to obtain the ISO 14001 certification, the international standard for environmental management systems.

[> ISO 14001 Certification of the Shin-Etsu Group](#)

[> ESG Data](#)

— Environmental Accounting

In FY2020, the company referred to the "Environmental Accounting Guidelines 2005" prepared by the Ministry of the Environment in Japan to calculate the investments and expenditures necessary to reduce the environmental impacts of air pollution, water pollution, environmental release of chemical substances, etc.; energy-saving measures to conserve the global environment; and reducing waste and recycling to reuse resources.

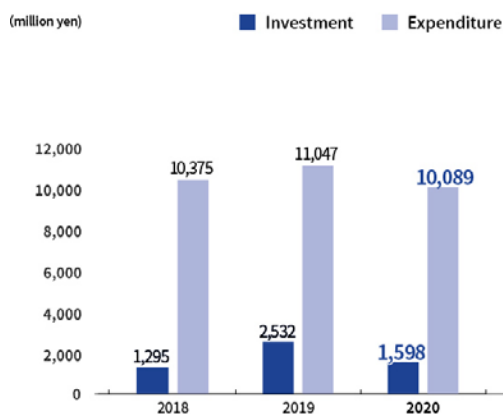
Environmental Conservation Costs in FY2020

		million yen	
Category	Details	Investment	Expenditure
Plant area costs		1,586	6,324
(1)Pollution prevention costs	Prevention measures for air, water, noise and other type of pollution	146	4,244
(2)Global environmental conservation costs	Energy saving and global warming mitigation measures	1,179	937
(3)Resource recycling costs	Waste reduction, recycling and other measures	261	1,143
Upstream and downstream costs	Green purchasing and container and packaging measures	11	8
Administration costs	Environmental management, environmental impact monitoring and environmental education measures	0.5	255
Research and development costs	Research and development of environmentally conscious products and processes	0	3,409
Social engagement costs	Donations and contributions to environmental saving	0	42
Environmental remediation costs	Assessment, handling and other costs related to environmental pollution	0	51
Total		1,598	10,089

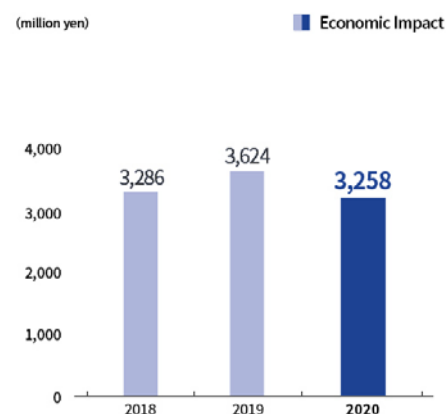
Economic Benefits of Environmental Accounting in FY2020

		million yen
Details of benefits	Economic benefit	
Energy saving	338	
Improved production efficiency	2,835	
(1)Production process	2,784	
(2)Secondary materials costs	51	
Reduction in waste treatment costs	-22	
Profit from sale of valuable resources	107	
Total	3,258	

Cost of Environmental Conservation:Investment and Expenditure



Economic Impact



The FY2020 targets and results and FY2021 targets for environmental protection and management of chemical substances are as listed below.

Item	Priority Issues (Target)	Implementation Status for Fiscal 2020	Evaluation	Planned Implementation Items for Fiscal 2021
Management System	1. Continuous improvement and implementation of the environmental management system	<ul style="list-style-type: none"> Implement plans and achieve goals without fail through activities leveled throughout the year Conduct substantial internal audits Appropriate responses to the findings of head office audits and plant internal audits, and reliable follow-up 	◎	<ul style="list-style-type: none"> Formulation and steady implementation of an action plan throughout the year (ongoing) Conduct substantial internal audits (ongoing) Appropriate responses to the findings of head office audits and plant internal audits, and reliable follow-up
	2. Qualitative improvement of environmental safety audits	<ul style="list-style-type: none"> Qualitative improvement of environmental safety audits for affiliated companies at the plant area Active involvement at overseas manufacturing bases as a mother plant through guidance and auditing 	○	<ul style="list-style-type: none"> Qualitative improvement of environmental safety audits for affiliated companies at the plant area (ongoing) Active involvement at overseas manufacturing bases as a mother plant through guidance and auditing (ongoing)
Environmental conservation	1. Zero environmental accidents	<ul style="list-style-type: none"> Achieved target of zero environmental accidents 	◎	<ul style="list-style-type: none"> Zero environmental accidents
	2. Thorough environmental management	<ul style="list-style-type: none"> Continued appropriate compliance with environmental laws and regulations 	◎	<ul style="list-style-type: none"> Appropriate compliance with environmental laws and regulations (ongoing)
	3. Promotion of energy savings (Reduce energy consumption by an average annual rate of 1% per unit production)	<ul style="list-style-type: none"> The Shin-Etsu Group: Reduced at an annualized rate of 0.2% Shin-Etsu Chemical: Reduced at an annualized rate of 1.6% 	△	<ul style="list-style-type: none"> Reduce energy consumption at an annualized rate of 1% in production intensity and formulation and promotion of an activity plan for achievement
	4. Reducing greenhouse gas emissions (Intensity reduction to 54% of 1990 level by fiscal 2025)	<ul style="list-style-type: none"> The Group reduced to 53.6% and the Company 49.8% compared to fiscal 1990 Periodic inspection based on the Act on Rational Use and Proper Management of Fluorocarbons and reporting to the national government on the amount of leakage calculated 	△	<ul style="list-style-type: none"> Reduction to 45% of 1990 level in production intensity by fiscal 2025 and formulation and promotion of an activity plan for achievement Periodic inspection based on the Act on Rational Use and Proper Management of Fluorocarbons and reporting to the national government on the amount of leakage calculated (ongoing)
	5. Reduce waste (Achieve zero waste emissions (waste to landfill ratio to 1% or less))	<ul style="list-style-type: none"> The Shin-Etsu Group: Landfill waste to total waste ratio of 1.14% Shin-Etsu Chemical: Landfill waste to total waste ratio of 1.44% 	○	<ul style="list-style-type: none"> Promote achievement of zero emissions (waste generation to landfill ratio to 1% or less), and formulation and promotion of an activity plan for achievement Promotion of waste generation in production intensity, and formulation and promotion of an activity plan for achievement
	6. Reduced emissions of substances causing water pollution or air pollution (Reduction in intensity at annualized rate of 1%)	<ul style="list-style-type: none"> Reduced at an annualized rate of 3.5% for BOD¹ Increased at an annualized rate of 28.7% for soot Reduced at an annualized rate of 2.2% for SOx Regular review and strict compliance with specific facility using hazardous substances pertaining to the Water Quality Pollution Control Act and installation standards for designated storage facilities Promotion of separation of process wastewater and rainwater discharged (including cooling water) and the laying of pipes installed in the rainwater drainage way on the ground 	◎	<ul style="list-style-type: none"> Regular review and strict compliance with specific facility using hazardous substances pertaining to the Water Quality Pollution Control Act and installation standards for designated storage facilities (ongoing) Promotion of separation of process wastewater and rainwater discharged (including cooling water) and the laying of pipes installed in the rainwater drainage way on the ground (ongoing)
	7. Reduction in water withdrawals (Reduction in intensity at an annualized rate of 1%)	<ul style="list-style-type: none"> The Shin-Etsu Group: reduced at an annualized rate of 3.2% Shin-Etsu Chemical: reduced at an annualized rate of 4.5% 	△	<ul style="list-style-type: none"> Reduction in production intensity at an annualized rate of 1% and formulation and promotion of an activity plan for achievement Plan and implement measures for improving recycling water ratio
Chemical substance management	1. Thorough new chemical substance management	<ul style="list-style-type: none"> Thorough management of permitted production volumes (confirmed) and production results Communicated reporting of harmful substance information, etc., at the time of acquisition 	◎	<ul style="list-style-type: none"> Thorough management of permitted production volumes (confirmed) and production results (ongoing) Communicated reporting of harmful substance information, etc., at the time of acquisition (ongoing)
	2. Compliance with legal and other requirements for chemical substance control	<ul style="list-style-type: none"> Responded to revisions and strict compliance with the Chemical Substances Control Law², Industrial Safety and Health Act, PRTR Law³, and Poisonous and Deleterious Substances Control Act Strict compliance with overseas laws and regulations Implement control of PCB waste and dispose required by the deadline (Deadline: 2022) 	◎	<ul style="list-style-type: none"> Respond to revisions and strict compliance with Chemical Substances Control Law, Industrial Safety and Health Act, PRTR Law, and Poisonous and Deleterious Substances Control Act (ongoing) Compliance with overseas laws and regulations (ongoing) Implement control of PCB waste and dispose required by the deadline (Deadline: 2022)
	3. Information disclosure on the harmfulness of chemical substances	<ul style="list-style-type: none"> Information disclosure and awareness raising of substances handled by contractors and subcontractors 	○	<ul style="list-style-type: none"> Making sure of well-known situations and information provision related to substances handled by contractors and subcontractors (ongoing)

¹ BOD (Biochemical Oxygen Demand)

Biochemical oxygen consumption. The amount of oxygen required when decomposing contaminants in the water by microorganisms. This indicates the degree of water pollution.

² Chemical Substances Control Law

Short for the "Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc." A law intended to prevent environmental pollution by chemical substances that can be harmful to human health or to ecosystems.

³ PRTR Law

Short for the "Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof." A law intended to promote improved self-directed control of chemical substances by business operators, in order to prevent the risk of damage to the environment.

* Intensity unit

A measure calculated from the production volume of a reference product.

* Average annual rate for implementation

Average annual reduction rate from fiscal 2018 to fiscal 2020

* Evaluation standards

○ : Goal achieved ○ : Goal basically achieved △ : 50% achieved × : Far from achieved

Energy-saving, resource-saving and reduction of the environmental impact

Environment Management

Response to Climate
Change

Resource Saving

Biodiversity and Pollutant
Countermeasures

Mid-term target

Reduce greenhouse gas emissions in terms of production intensity to 45% of the FY1990 level by FY2025.¹

Results and evaluation in FY2020

Achieved reduction to 53.6% for the Shin-Etsu Group² and 49.8% for Shin-Etsu Chemical.

FY2020

Target : Reduce energy consumption in terms of production intensity at an average annual rate of 1%.

Results : The average annual reduction rate from FY2018 to FY2020 was 0.2% for the Shin-Etsu Group and 1.6% increased for Shin-Etsu Chemical.

Evaluation : The target was not achieved..

FY2021

Target : Reduce energy consumption in terms of production intensity at an average annual rate of 1%.

¹ For the calculation of emissions, CO₂ emission factors for electricity are averaged from 2000 to 2009 so that efforts to reduce electricity can be clarified.

² Includes non-consolidated group companies.

— Results

In order to take concrete measures against climate change, the ESG Promotion Committee, chaired by the President, works with each department to tackle these important issues.

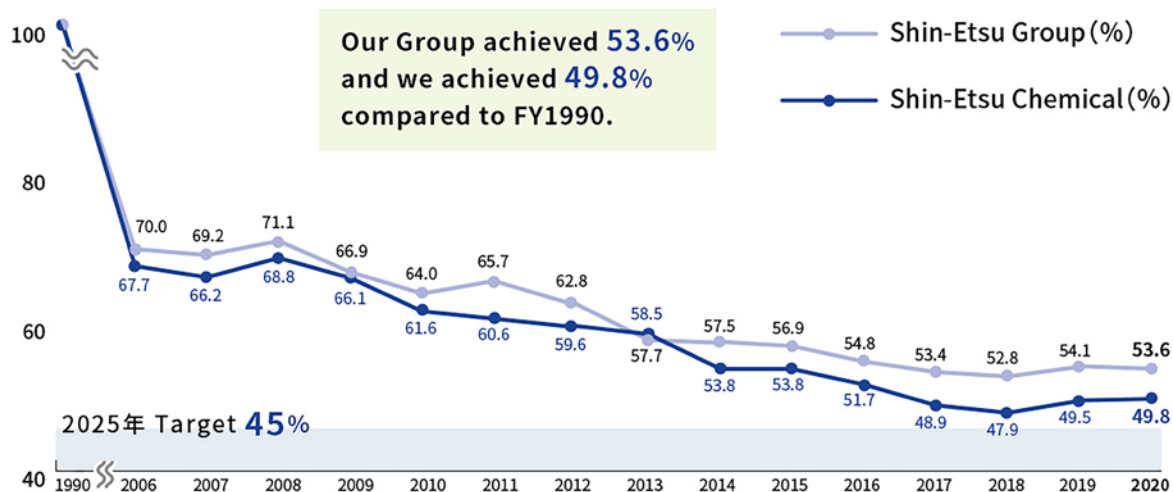
Starting from FY2010, the Group has implemented energy-saving strategies and installed a cogeneration system as well as innovative technologies, in order to achieve the mid-term goal of reducing greenhouse gas emissions in terms of production intensity to 50% of the FY1990 level by FY2015. Furthermore, in FY2016, we set a new mid-term target of reducing greenhouse gas emissions in terms of production intensity to 45% of the FY1990 level by FY2025, and we have been working towards that goal. In FY2019, we started reducing power consumption by deploying cogeneration systems with gas turbines among other initiatives.

In May 2019, the Shin-Etsu Group announced its support of the recommendations from the TCFD.¹ We also participated in the TCFD Consortium of Japan.² We will continue to share information regarding climate change in line with the TCFD recommendations.

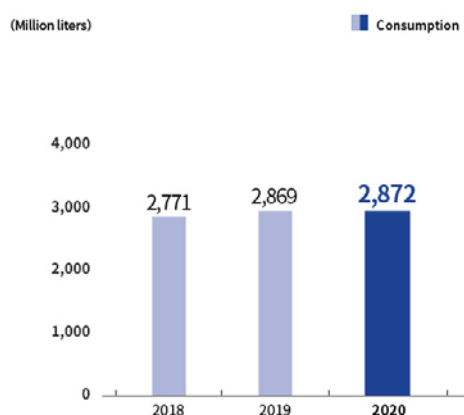
Related Information

> Shin-Etsu Group and Climate Change

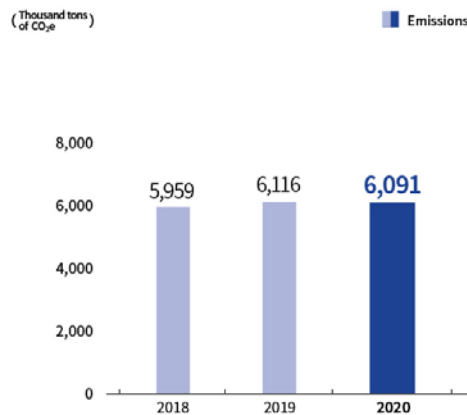
Changes in Greenhouse Gas Emissions in Terms of Production Intensity Relative to the FY1990 Level



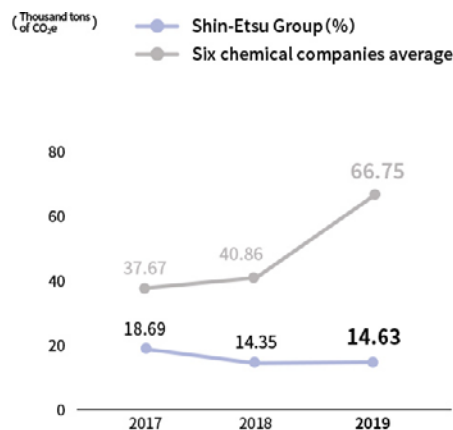
Energy Consumption (crude oil equivalent)



Greenhouse Gas Emission Volume Trends



Greenhouse Gas Emission Volume Trends (sales intensity)



TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES



* Sales intensity = Emission (tons of CO₂) / Consolidated or non-consolidated sales (million yen)

* Scope of aggregation of greenhouse gas emissions of the Shin-Etsu Group: Group companies refer to five chemical companies (except for the Shin-Etsu Group), including four consolidated companies, one major group company.

¹ TCFD

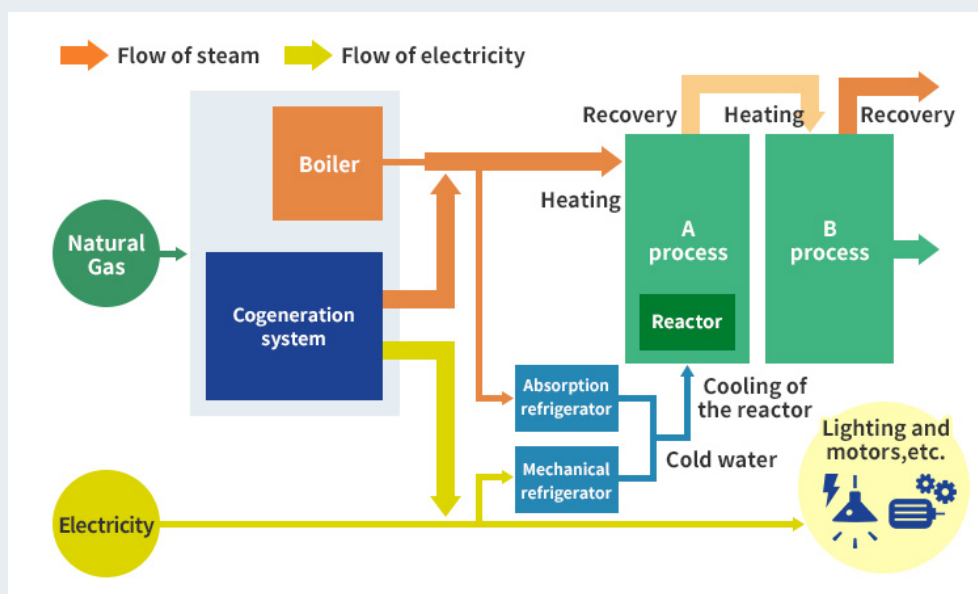
The Task Force on Climate-related Financial Disclosures (TCFD) is a special team focusing on climate change disclosure, and was established by the Financial Stability Board (FSB) in September 2015. In July 2017, the TCFD published a set of recommendations calling for corporations to analyze their risks and opportunities based on future scenarios and various mid to long-term predictions of climate change, and to disclose the impact on their finances.

² TCFD Consortium of Japan

It is a group established by the Ministry of Economy, Trade and Industry, the Financial Services Agency, and the Ministry of the Environment in May 2019. Companies and financial institutions that agree with the recommendations from TCFD aim to promote the effective disclosure of information by companies and the efforts to link the disclosed information to appropriate investment decisions by financial institutions and other investors.

Thermal Energy Recycling Initiatives

Each plant in Shin-Etsu Chemical is working on recycling thermal energy.



Flow of steam and electricity at the plant

■ Installation of a Cogeneration System

Steam and electricity are produced in a plant by using a cogeneration system.¹ Electricity produced by the cogeneration system supports manufacturing operations. In addition, steam is used for heating and the thermal insulation of manufacturing equipment. The steam used for heating will not be emitted but reused for manufacturing equipment that can handle low-temperature steam. Eventually, the steam is converted into water to be collected and recycled.

■ Waste Heat Recovery

Heat is recovered from the production process and is used as thermal energy in another process. Furthermore, the remaining waste heat is collected mainly as steam to make cold water in the absorption refrigerator. This chilled water is used to cool the manufacturing equipment, etc.

¹ Cogeneration system (heat and power combined) This system generates power with engines, turbines, and fuel cells using natural gas, petroleum, liquefied petroleum gas, etc., and simultaneously collects the generated heat as steam. Effective use of both electricity and waste heat can reduce CO₂ emissions and improve economic efficiency through energy conservation.

Scope 3 Greenhouse Gas Emissions

The Group's scope 3 greenhouse gas emissions for FY2020 were 10,208 thousand tons of CO₂, amounting to 63% of the supply chain.¹

¹ Supply chain

All stages of a product from raw material production until it reaches the final customer

Related Information

> [Environmental Data](#)

Scope 3 Emissions Calculation Methods

Category	Category definition	Emissions (Unit: thousand CO ₂ tons)	Amount of activity	Source of emission intensity used
1.Purchased goods and services	Emissions from activities leading up to the production of raw materials and parts, purchased products, and sales materials	5,117	Volume of raw materials purchased	Ministry of the Environment Emissions Source Database (Ver.3.1) IDEA v2 Emissions per unit of production obtained from suppliers
2.Capital goods	Emissions from the construction and manufacture of the company's capital goods	625	Increase in property, plant and equipment and intangible assets	Ministry of the Environment Emissions Source Database (Ver. 3.1)
3.Fuel-and energy-related activities not included in Scope 1 and 2	Emissions associated with mining and refining of procured fuel Emissions associated with mining and refining of fuel used to generate electricity procured	799	Total amount of energy purchased	Ministry of the Environment Emissions Source Database (Ver. 3.1)
4.Transportation and delivery (upstream)	①Emissions associated with logistics from suppliers of products and services purchased in the fiscal year covered by the report to the company.	882	Weight of purchased raw materials and the transportation distance of raw materials	Energy Conservation Law (ton-kilometers method)
	②Emissions associated with logistics services other than ① purchased in the fiscal year covered by the report (emissions associated with logistics incurred by the company)		Product transport volume and distance (at the company's expense)	Energy Conservation Law (ton-kilometers method)
5.Waste generated in operations	Emissions from the transport and treatment of waste generated in-house	40	Amount of Waste by Type	Ministry of the Environment Emissions Source Database (Ver. 3.1)
6.Business Trip	Emissions from employee business trips	2	Total number of days traveled by type	Ministry of the Environment Emissions Source Database (Ver. 3.1)
7.Employer's commutation	Emissions due to transfer when employees commute to the office	21	Commuting expenses such as commuter pass expenses	Ministry of the Environment Emissions Source Database (Ver. 3.1)
8.Leased assets(upstream)	Emissions from the operation of leased assets leased by the company	-	Exclusion from calculation (The Group covers leasing of non-production bases overseas, but does not cover it due to the small amount)	
9. Transportation and delivery (downstream)	Emissions associated with the distribution of products sold by the company to final consumers (not borne by the company)	146	Volume and Distance of ProductTransportation (at the customer's expense)	Energy Conservation Law (ton-kilometers method)
10. Processing of sold products	Emissions from the processing of intermediate products by businesses	-	Non-applicable (Application of WBCSD's Chemical Sector Guidelines: "Chemical companies are not required to report Category 10emissions due to the difficulty of obtaining reliable figures due to the diverse use and client mix.")	

11. Use of sold products	Emissions from the use of products by users (consumers and businesses)	-	Non-applicable (Application of WBCSD Guidelines for the Chemicals Division: "If an end-user of a chemical is unknown, a chemical company should not include indirect use phase emissions in its inventory.")	
12. End of life treatment of sold products	Emissions from the disposal of products by users (consumers and businesses)	2,576	Volume of products	Ministry of the Environment Emissions Source Database (Ver. 3.1) IDEA v2
13. Leased assets (downstream)	Emissions from the operation of leased assets	-	Non-applicable (We do not have any assets leased to other companies.)	
14. Franchise	Emissions by franchisees	-	Non-applicable (We are not a franchised entity.)	
15. Investment	Emissions associated with the operation of investments	-	Non-applicable (There is no investment for profit.)	

*After reviewing the calculation targets and methods with reference to the Ministry of the Environment, the Ministry of Economy, Trade and Industry's Basic Guidelines on the Calculation of Greenhouse Gas Emissions through the Supply Chain (Version 2.3), and WBCSD's Guidance on the Calculation and Reporting of Corporate GHG Emissions in the Chemicals Sector Value Chain, Category 10 was not included, and the calculation methods for Categories 1, 4, 6, and 12 were changed.

Related Information

[> Environmental Data](#) 

Shin-Etsu Chemical Products that Contribute to Actions to Combat Climate Change



The Group's products contribute to actions to combat climate change because they are used in a wide range of final products in each country. This helps to achieve goals 7 and 13 of the Sustainable Development Goals (SDGs) which are "Affordable and Clean Energy" and "Climate Action," respectively. Sales of products that contributed to these two goals amounted to 212 billion yen in FY2020.

*The scope of the reporting organization was changed from Shin-Etsu Chemical and its group companies, including non-consolidated companies, to Shin-Etsu Chemical and its consolidated companies, retroactive to FY2018.

*Emissions were calculated using CO₂ emission factors of power suppliers retroactive to FY2018.

Related Information

[> Shin-Etsu Group and SDGs](#)

[> Shin-Etsu Group and Climate Change](#)

Energy-saving, resource-saving and reduction of the environmental impact

Environment Management

Response to Climate Change

Resource Saving

Biodiversity and Pollutant Countermeasures

Water Resource Conservation, Water Pollutant Elimination

Employee Initiatives

Waste reduction

Resource recycling

— Water Resource Conservation and Water Pollutant Elimination



FY2020

Target:

Reduce water withdrawal in terms of production intensity at an average annual rate of 1%.

Reduce water pollutant discharge in terms of production intensity at an average annual rate of 1%.

Results:

The average annual rate from FY2018 to FY2020 was increased by 3.2% in terms of water withdrawal and reduced by 3.5% in terms of BOD emission.

Evaluation: Achieved the target for BOD, but not for water withdrawal.

FY2021

Target: Reduce water withdrawal in terms of production intensity at an average annual rate of 1%.

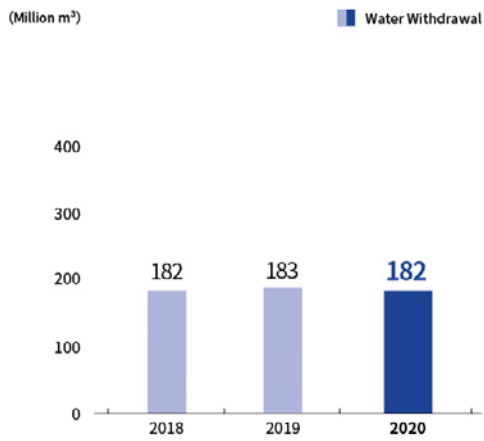
Reduce water pollutant discharge in terms of production intensity at an average annual rate of 1%.

— Results

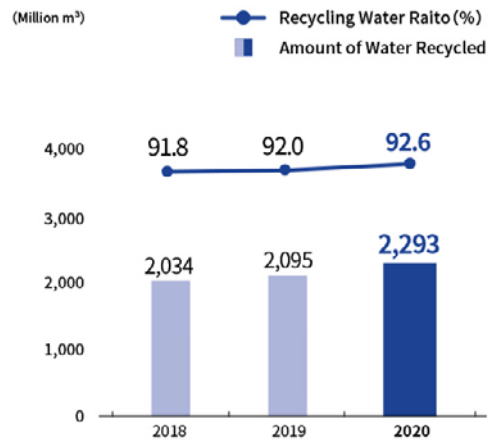
There are water scarcity areas in the world, and the United Nations Environment Program (UNEP) has predicted that the issue of water scarcity in some regions will become serious by the year 2025. The Shin-Etsu Group's major manufacturing plants are located where clean water is abundant. However, we recognize that tackling water shortages around the world is an important issue for us to work on. The Group carries out water risk assessments and works proactively study for the technology for the conservation of water resources by reducing water withdrawal, ensuring that water is recycled, and implementing thorough wastewater purification and water quality management.

In addition, we are working to recycle water to the utmost limit, and we also properly treat the water that is finally discharged, comply with regulations concerning water contaminants when discarding water, and check the water quality ourselves for verification.

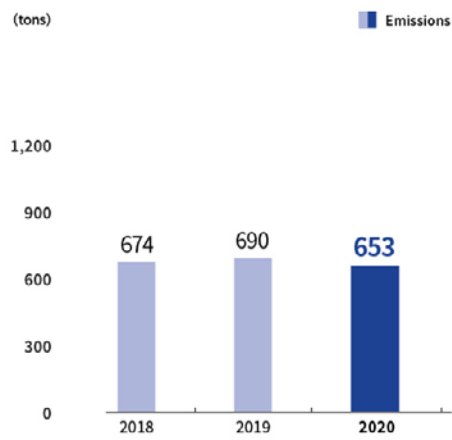
Trend of Amount of Water Withdrawn



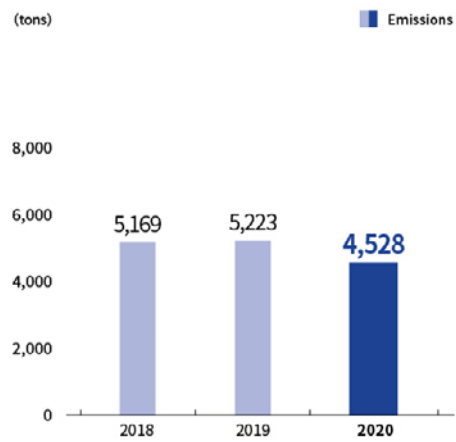
Trend of Amount of Recycled Water



Trend of BOD Emission Volume



Trend of COD Emission Volume



Related Information

[> ESG Data](#)

[> Environmental Data](#)

— Employee Initiatives



Shin-Etsu
Chemical
Naoetsu Plant
Environment and
Safety Department
Mr. TS

Managing various emissions from our plants appropriately

1. Please tell us about your business.

Many substances are discharged from the production processes of the Group's plants, but we are actively working to improve the environment, not merely complying with laws and regulations. The main issue facing the plant is reducing the risk of releasing waste water from our production processes outside. Examples include optimizing the drainage system, separating rainwater from the water discharged from production processes, and improving the quality of discharged water.

2. How is the Naoetsu Plant working to reduce BOD and SS¹?

At this plant, wastewater, including high-concentration BOD and SS generated in the production process, is treated and adjusted to below emission standards for biological treatment facilities (anaerobic and aerobic treatments) and sedimentation treatment facilities before being released into rivers. Currently, we are working to reduce the risk of releasing BOD and SS into rivers by improving the efficiency of the biological treatment, increasing the treatment capacity, and reviewing and optimizing our wastewater systems. To reduce the risk of environmental pollution through early detection of irregularities, we are expanding our lineup of measuring and monitoring instruments, such as TOC,² turbidity,³ and pH,⁴ at each drainage groove of our plants. The total amount of wastewater discharged from plants is large, so even a small reduction in BOD emissions would result in a significant reduction in the annual amount of BOD emissions. It is difficult to optimize the treatment of wastewater at the optimal location feasibly while satisfying the requirements of many related laws, such as site conditions and layout regulations. However, achieving the 12th SDG target of "Responsible Consumption and Production" is linked to the achievement of environmental impact reduction even when facilities are being expanded to develop new businesses and new products.

¹ Suspended solids (SS)

A water quality indicator and a generic term for insoluble substances with a particle size of 2 mm or less suspended in water.

² Total Organic Carbon (TOC)

This indicates the amount of carbon contained in organic matter in water. It is used as an indicator of organic pollution.

³ Turbidity

An indicator of the degree of water turbidity.

⁴ pH

Potential of hydrogen, representing the degree of acidity and alkalinity of the solution.

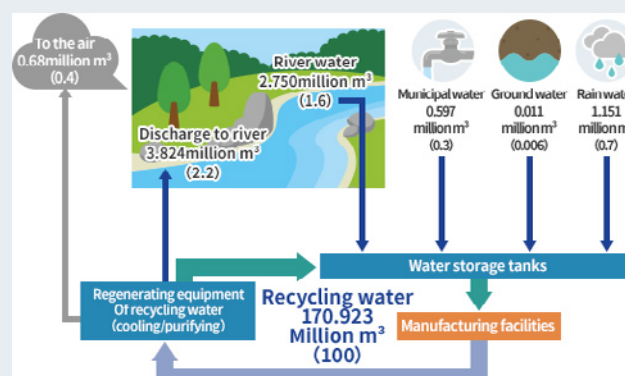
Water Resource Conservation Efforts by the Shin-Etsu Chemical Gunma Complex

The Shin-Etsu Chemical Gunma Complex manufactures highly functional materials such as silicones. Located inland in the southwest region of Gunma Prefecture, the complex draws almost all of the water required for manufacturing from nearby rivers and purifies the wastewater from the complex before discharging it.

The Gunma complex is situated in a rich natural environment. The Tokyo metropolitan area is downstream from the nearby rivers, which sustain the daily lives of Tokyo residents as well as its industry and agriculture. Although the manufacturing of chemical products requires large quantities of water, the complex strives to conserve valuable water resources by keeping its water intake from these rivers to a minimum. For this reason, the complex **reuses as much water as possible** in its manufacturing and water cooling processes by **recycling and circulating** inside the Complex.

Besides **purifying the water** before returning it to the rivers, **rigorous water quality management** is also applied. The Complex strives to maintain optimum conditions by continually monitoring the operating status of water treatment facilities and conducts regular water quality analysis of discharged water to verify that it is in strict compliance with high water standards. Furthermore, it separates rainwater to prevent the inflow of rainwater during heavy downpours as a measure to protect their treatment facilities from being damaged by natural disasters. In addition, it has been carrying out seismic strengthening works since 2014 in preparation of large-scale earthquakes.

By effectively utilizing limited water resources, the Gunma complex will continue to fulfill its responsibility as a production base that is located upstream.



Water Flow at the Shin-Etsu Chemical Gunma Complex (FY2020)

Rainwater Utilization at Overseas Group Company

Calls are increasing for the protection of the world's water resources, and since its foundation, Asia Silicones Monomer Limited has been making effective use of the abundant rainfall it enjoys in its location in Thailand.

It stores rainwater in storage tanks on-site, using it for industrial water and as coolant for waste gas incinerator. It always maintains a reserve of rainwater for use in firefighting in the event of an emergency. It also supplies Group company Shin-Etsu Silicones (Thailand) and its nearby partners with industrial water using rainwater.



— Waste Reduction



FY2020

Target:

Achieve zero waste emissions (landfill waste of 1% or less of the final amount of all waste generated)
Promote the reduction of waste generation in terms of production intensity

Results:

The final waste landfill disposal rate was 1.14% in the Shin-Etsu Group and 1.44% in Shin-Etsu Chemical.
Evaluation: The target was not achieved.

FY2021

Target: Achieve zero waste emissions.

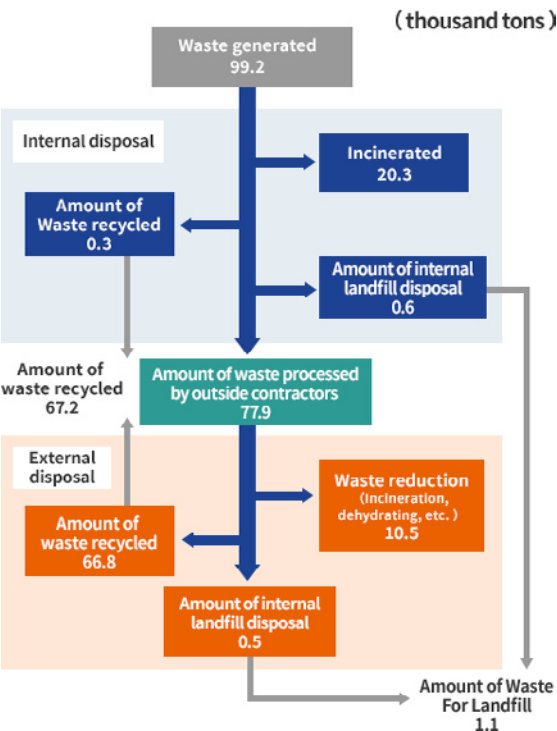
Promote the reduction of waste generation in terms of production intensity.

— Result

In FY2020, the amount of recycled waste also decreased due to a decrease in the amount of waste generated compared to FY2019. In FY2020, we worked to internalize treatment of waste water containing copper ion, reduce the amount of septic additives in wastewater treatment tanks, and improve the use rate of sludge dehydration facilities.

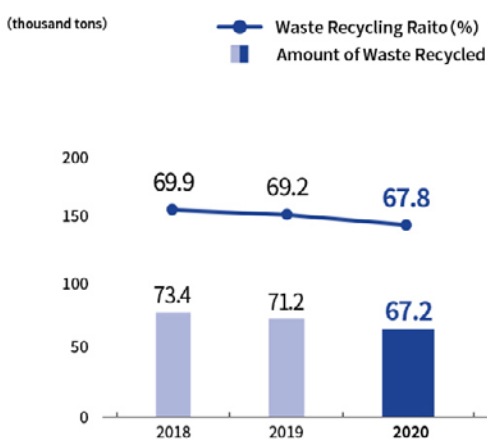
We hire external contractors to handle our disposals. We check to confirm that they handle disposals properly by regularly inspecting their operations.

Flow of Waste Disposal

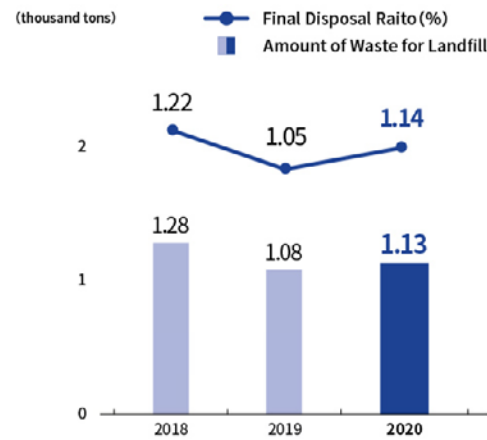


* The figures are aggregated only for Shin-Etsu Chemical and Group companies in Japan because waste standards differ from country to country.

Trend of Amount of Waste Recycled



Trend of Amount of Waste Sent to Landfills



* Total of Shin-Etsu Chemical and domestic consolidated companies.

Related Information

> [Environmental Data](#)

— Resource Recycling



The Group collaborates with customers and related industry groups, using cutting-edge technologies to recover used products, extract resources, and reuse them in the Group's products. Through these initiatives, it is possible to reduce the waste output of our customers and the Group itself. We are also contributing to environmental conservation by reusing resources.

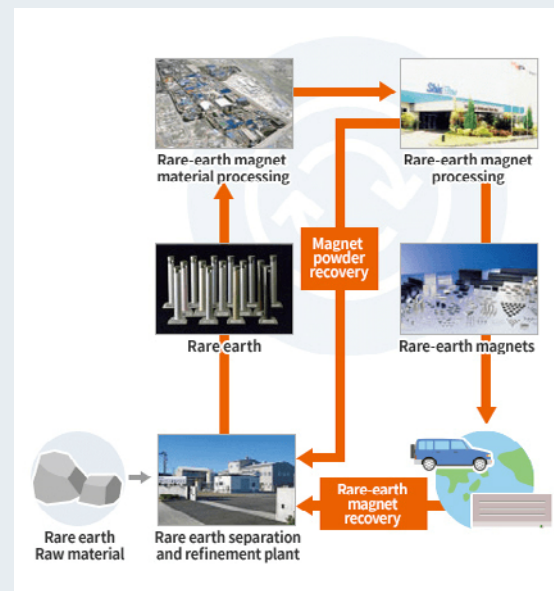
Rare Earth Magnet Resource Recycling

The Group manufactures rare earth magnets with our integrated production process using separation and refinement techniques to extract rare earth magnets from rare earth raw materials.

Since 2007, the Group has been recycling the magnet powder generated by our manufacturing processes for rare earth magnets as one of our measures for the stable procurement of raw materials. Furthermore, since March 2013, we have also been developing techniques to recycle the rare earth magnets used in recovered power-saving air conditioners and hybrid cars in order to reuse resources.

These initiatives have made it possible to reduce the environmental impact that comes along with resource development and to safely and securely protect the valuable resource of rare earth. The Group's rare earth magnets create significant economic and social value as recycled products and also contribute significantly to energy conservation.

Rare Earth Magnet Resource Recycling Process

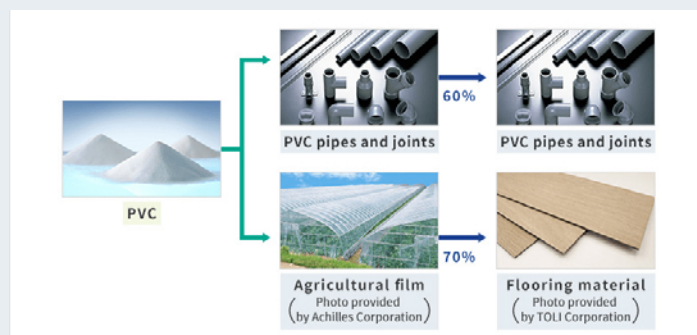


Recycling of PVC Products

Initiatives to recycle products containing PVC are making progress. There are various methods for recycling PVC, the most common of which is material recycling.

Material recycling uses used PVC products as raw materials to create new PVC products. PVC pipes, flooring materials, and other PVC products are not greatly influenced by foreign substance contamination, so various kinds of recycling are conducted for those products. In particular, 60% of used PVC pipes and joints are recycled for reuse in new PVC pipes and joints, and 70% of agricultural film is recycled for use in flooring material.

Examples of Recycling PVC Products



> Vinyl Environmental Council

Recycling the Use of Product Shipping Cartons

Shin-Etsu Chemical started recycling product shipping cartons for heat-dissipating silicone grease from FY2018. Heat-dissipating silicone grease must be transported while frozen to stabilize its product quality. Therefore, we used dry ice to cool products in disposable boxes in transit in the past. As a result of extensive research conducted collaboratively with customers, the company has successfully developed the new packaging that can be recycled multiple times while maintaining optimal temperatures. In addition, this new packaging eliminates the need for dry ice, resulting in a reduction of 28.2 tons of carbon dioxide per year.

Marine Plastic Problem

Marine plastic problem is one of the most important issues for the chemical industry. We believe that there are business opportunities since the problem is unlikely to be resolved with existing products. It is therefore all the more worth it for the Group to take on this challenge. We are working on this issue together with the Japan Initiative for Marine Environment.¹

¹ Japan Initiative for Marine Environment

An organization established in September 2018 by the Japan Chemical Industry Association, the Japan Plastics Industry Federation, the Plastics Waste Management Institute, the Japan Petrochemical Industry Association, and the Vinyl Environmental Council to address the marine plastic waste problem for the entire chemical industry.

Energy-saving, resource-saving and reduction of the environmental impact

Environment Management

Response to Climate Change

Resource Saving

Biodiversity and Pollutant Countermeasures

— Conservation of Biodiversity

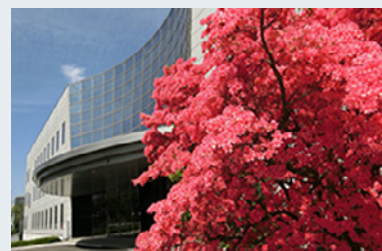
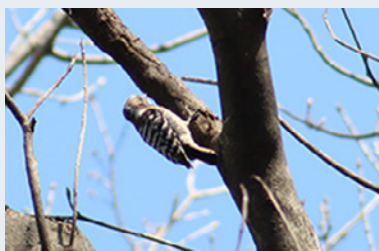
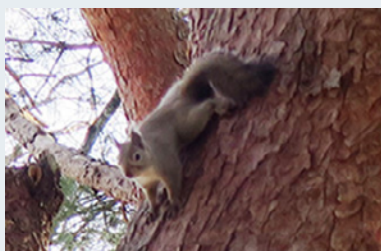


The Shin-Etsu Group aims to design environmentally considerate product starting from the product development stage. At the same time, we are also meeting our responsibilities as a chemical company by working actively to ensure the strict control of chemical substances, mitigate global warming, reduce energy consumption, reduce the amount of waste generated, prevent air and water pollution, and make other environmental contributions. We are also engaged in activities such as tree planting at our plant sites in compliance with the Factory Location Act and voluntary river cleaning in areas around our plants. Furthermore, we request our suppliers to implement environmental conservation initiatives in accordance with our CSR procurement guidelines.

The Group preserves the earth's ecosystem through these efforts.



Nearby river cleanup effort
(June 2020, Shin-Etsu Chemical
Takefu Plant)



Animals and plants that live and grow in the premises of our factories (From the left: squirrels, Japanese pigmy woodpeckers, and Kirishima azaleas at the Shin-Etsu Handotai Shirakawa Plant)

Biodiversity Conservation Efforts of Our Pulp Suppliers

We have purchased pulp derived from wood as the main raw material of cellulose derivatives. When purchasing pulp, we ask all our pulp suppliers to consider the conservation of biodiversity, and we have confirmed that they have all obtained national and/or international forest certifications. In addition, we work hard to learn about our pulp suppliers' biodiversity activities.

— Release of Chemical Substances



The Group strictly manages the discharge of necessary chemical substances. The Group works to reduce chemical release with proper manufacturing processes and the proper operation conditions of pollutant treatment facilities. In addition, the Group reports the amount of chemical substances released and transferred in the environment according to the PRTR system¹ under the PRTR Law.²

In FY2020, we invested in the recovery of chloromethane by improving the separation capacity of silane synthetic distillation towers, and reduced the release of chloromethane into the atmosphere. In addition, although the emissions of acetaldehyde were originally within the wastewater regulation value, emissions were further reduced through the separation of wastewater from processes.

The Group does not use or produce substances that fall under the Stockholm Convention on Persistent Organic Pollutants.³

¹ PRTR system

Chemical substance release and transfer notification based on the "Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof"

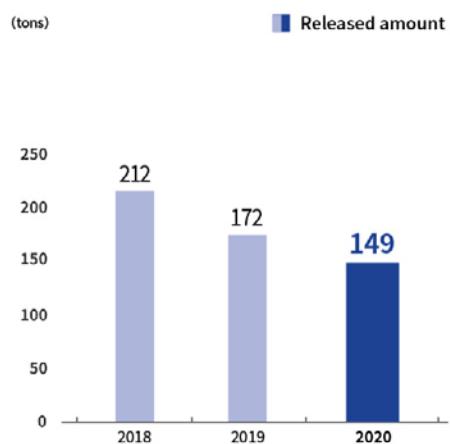
² PRTR Law

Short for "Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof," it is intended to promote the voluntary control of chemical substances by business operators in order to prevent the risk of damaging the environment.

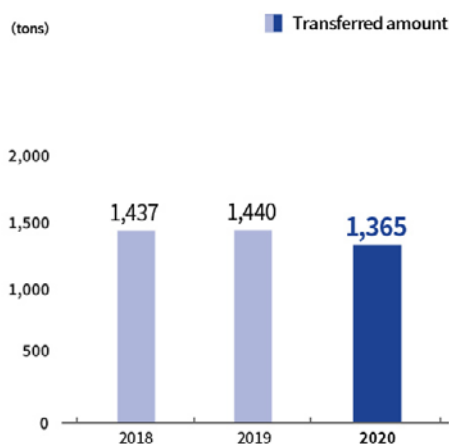
³ Stockholm Convention on Persistent Organic Pollutants

It is a convention that prohibits or restricts the production, use, export, or import of designated substances for the purpose of reducing persistent organic pollutants that would require immediate attention. It is also known as the Stockholm Convention or POPs Convention.

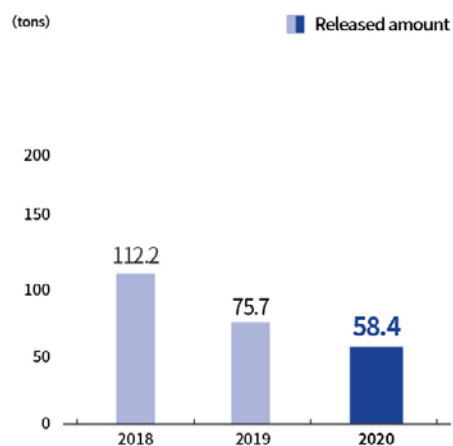
**PRTR Controlled Substance:
Trend of Total Amount Released**



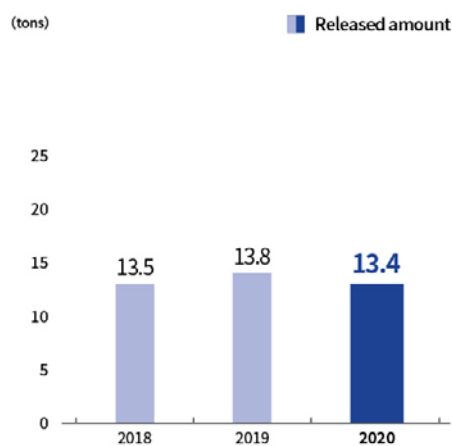
**PRTR Controlled Substance:
Trend of Total Amount Transferred**



**PRTR Controlled Substance:
Chloromethane Release Trend**



**PRTR Controlled Substance:
Chloroethylene Release Trend**



* The figures are aggregated only for Shin-Etsu Chemical and consolidated companies in Japan.

* The amount of emissions of substances designated by the PRTR system changes depending on the production volume.

Related Information

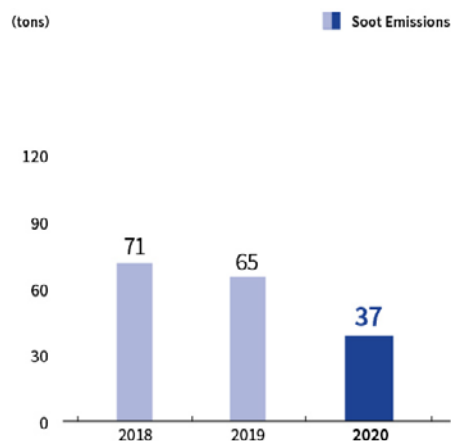
[> Environmental Data](#) 

— Prevention of Air Pollution

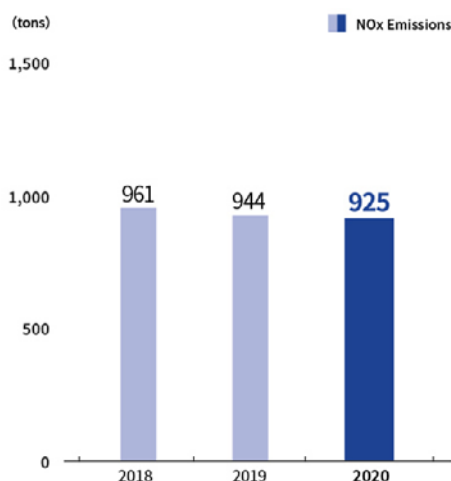


The Group is working to reduce emissions of air pollutants by setting emission reduction targets at each of our Group companies and by converting to the use of fuel components with less sulfur. Each group company carried out regular investigations on their emitted gas to confirm that they comply with laws and regulations. In FY2020, soot and NOx emissions decreased. Some group companies changed their measurement methods for particulates, resulting in a decrease in emissions. We also reduced NOx emissions by optimizing the operation management of our incinerators.

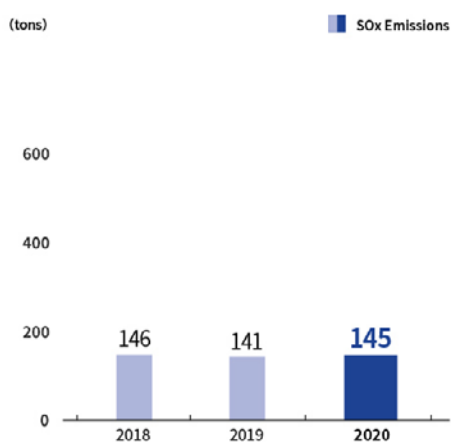
Soot Emissions Trend



NOx Emissions Trend



SOx Emissions Trend



Related Information

[> ESG Data](#)

[> Environmental Data](#)

— Prevention of Soil Pollution



Groundwater and soil monitoring is carried out at each plant in accordance with the Soil Contamination Countermeasures Act, and we make sure that we are in compliance with laws and regulations. In FY2020, the company performed groundwater and soil monitoring 192 times at its plant sites.

Product quality improvements and product safety control

Quality control



Employee Initiatives



Quality Audits and Support



Product Safety Control



— Quality Control

The Group is making a continuous effort to provide high-quality products to customers stably. We have established a robust internal quality management system, and are continuously striving to improve quality and reduce deviations and waste.

Customer requests are promptly and accurately sent to the Research Center and Production Department through the Sales Department, and utilized for the research and development of new products and the improvement of existing products.

The products are delivered to customers after a final inspection, taking into account the characteristics of the products and how customers will use them.

Sales Department, Research and Development Department, Production Department, and Quality Assurance Department of each of the company's department and Group companies cooperate by taking on the following roles in order to meet the requests of our customers.

Sales Department

Understand the customer's requests, and promptly and accurately share the information with our Research and Development Department and the Production Department.

Research and Development Department and Production Department

Research and develop new products and improve existing products based on the customer's requests. We are promoting the automation of the manufacturing process in order to achieve consistent quality.

Quality Assurance Department

Make the final confirmation on the product while taking into account the characteristics of the product and how they will be used. We have enhanced the accuracy of quality measurement by pursuing the automation of measurement processes to eliminate variations due to quality measurement personnel, sample preparation, and measurement procedures. In addition, convert measurement results into data and used to prevent typing errors when creating inspection tables and labels.

Almost all of the Group's manufacturing bases, both domestic and overseas, have obtained certifications for their quality control systems, such as ISO 9001 and IATF16949.¹ We have also established a strict rule to respond to all inquiries related to product quality from customers within two business days.

¹ IATF16949

A quality management system for the automotive industry

Related Information

[> ISO 9001 Certification of the Shin-Etsu Group](#)

— Employee Initiatives



Shin-Etsu
Chemical Gunma
Complex
**Mr.TI, Inspection
Group, Quality
Assurance
Department**

IT training provided insights for utilizing AI in quality inspections

1.Please tell us about your job.

In my department, we inspect products made of silicone and organic materials. My main work is to consider, propose, and install inspection facilities and equipment, including the installation of automated inspection equipment and the construction of inspection systems.

2.Why did you wish to participate in the IT training?

Many product inspections rely on human senses to determine whether a product is acceptable or not, so it is better to make such determinations automatically without human subjectivity. In recent years, AI-based image analysis technologies have been developed rapidly and become popular. I took an IT training course because I wanted to deepen my knowledge of AI and apply the technology to inspection operations such as visual inspection.

3.What lessons from the IT training can you put to practical use?

First, in the AI lecture, I learned how to handle big data and various algorithms of AI, and their characteristics. We were then divided into small groups to obtain practical knowledge and experience by looking at case studies and discussing past AI analysis examples. I believe that this allowed us to quickly utilize AI in the workplace. Product inspections involve a large amount of inspection data. By comprehensively analyzing this data in AI, I believe that it is possible to detect defective products with higher precision, in addition to relying on the experience and judgment of individuals. I also believe that we can achieve higher quality control if we can make stable inspection decisions that are not affected by human subjectivity by implementing the AI image analysis technologies described above, especially to inspect the appearance of products using deep learning.

— Quality Audits and Support

Since 2000, we have conducted quality audits annually to improve quality and customer service. Quality control activities are evaluated based on two different viewpoints: customer and quality cost. We work to find the root cause of quality issues and strive to prevent re-occurrence. In the quality audit in FY2020, the following items were audited as priority items:

- (1) Automating manufacturing processes to prevent careless human errors caused by workers' assumptions and misunderstanding
- (2) Increasing the accuracy of quality measurement by pursuing the automation of measurement processes to eliminate variations due to quality measurement personnel, sample preparation, and measurement procedures
- (3) Establishing a system to automatically incorporate inspection data into a database and store and share them in order to prevent typing errors when creating inspection reports and labels

Six Sigma programs¹ were also deployed throughout the company to improve the quality level.



Quality audit (September 2020, Shin-Etsu Chemical Kashima Plant)



The 20th debrief session of the results of Shin-Etsu Six Sigma (February 2020, Shin-Etsu Chemical Head Office)

¹ Six Sigma programs

Quality improvement method developed by Motorola in the 1980s. Focusing on processes with quality variation, it is designed to minimize variations within the processes, thereby reducing the incidence of quality defects. This approach has been adopted across the Group.

— Product Safety Control

We manage product safety, from product development to transportation, based on internal regulations. To ensure the safety of new chemical substances, we assess and confirm environmental and health risks at the development stage. When developing new chemical substances, we focus on products and manufacturing technologies that do not use hazardous substances that have been designated by the Industrial Health and Safety Act and Chemical Substances Control Law,¹ as well as the EU RoHS Directive.² Furthermore, we make sure that the necessary notifications and reports are submitted according to laws and regulations.

We offer customers information such as on product hazards and harms in the form of SDS³ in order to ensure the proper transmission of information to customers and transportation firms. In addition, we request customers to handle products safely by complying with laws and regulations, installing abatement equipment, wearing protective equipment and so on through SDS.

As a product transportation safety measure, we issue yellow cards⁴ and container yellow cards⁵ that are affixed to containers. In accordance with the Industrial Safety and Health Act, we also attached symbols to indicate hazardous and harmful substances in accordance with GHS⁶ on product containers and packaging.

¹ Chemical Substances Control Law

Short for "Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.," it is intended to prevent environmental pollution by chemical substances that can be harmful to human health or to ecosystems.

² Restriction of Hazardous Substances (RoHS)

An EU directive that restricts the use of certain hazardous substances in electrical and electronic equipment.

³ Safety Data Sheet (SDS)

SDS lists the physical and chemical properties of chemical substances, together with their harmfulness and emergency response procedures. Designed to promote safer use of chemical substances and prevent accidents and incidents, SDS are supplied by manufacturers, importers, and distributors to customers during sales or shipment.

⁴ Yellow cards

Yellow cards are cards that describe all relevant information on the treatment required in case of an accident during the transportation of chemical substances. The cards are handed to the transport contractor, who carries them when transporting the chemical substances in tanker lorries, etc.

⁵ Container yellow cards

The standard yellow card system is not suitable for use with mixed cargoes and small-lot deliveries; instead, each container carries a label displaying the safety information such as the UN number of a chemical name and the ERG guide number.

⁶ Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

An internationally standardized system of classification and labeling of chemicals.

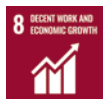
Related Information

[> ESG Data](#)

Promoting CSR procurement and the diversification of supply sources

Basic Procurement Policy ▾	Employee Initiatives ▾	Compliance with the Act against Subcontractor ▾	Sustainable Procurement ▾
Procurement Audit ▾	Procurement Conferences ▾	Control of Chemical Substances Used as Raw Materials ▾	

— Basic Procurement Policy



Created by the Group, this policy is shared within the company and posted on the website. We ask suppliers to understand the "Basic Procurement Policy" and to incorporate the content of the policy into their supply contracts. To let suppliers better understand the policy, we created the CSR Procurement Guidelines, which is posted on the website. We held meetings to explain the guidelines to suppliers in July 2017 and January 2018, asking suppliers for their understanding and cooperation in promoting CSR.

In January 2018, we established the Supplier Hotline to ensure the transparency and fairness of transactions between the Group and suppliers.

Shin-Etsu Group's Basic Procurement Policy

1. Legal compliance

As the most important of its management objectives, the Company conducts all of its business activities in a law-abiding spirit. Each and every staff member is made fully aware of corporate social responsibilities and they carry out their business activities in strict conformity with the law, business ethics and the various rules and regulations of the Company.

In its purchase and procurement activities, the Company acts in good faith and in a fair manner, and does not practice favoritism, nor make improper demands. In addition, based on mutual trust, not only between the Company and the suppliers that the Company directly procures from, but also with vendors in the linked supply chain, all those companies involved carry out their business activities in strict accordance with the principal labor standards of International Labor Organization (ILO), any laws and regulations related to protection of the environment and business transactions including those of small- and medium-size enterprises.

2. Promotion of corporate social responsibility

The Company places primary importance on corporate social responsibility (CSR) activities. For the promotion of CSR, the cooperation of all the Company's suppliers is essential, and we ask you to comply with the Company's policies in the areas listed below. At the same time, we will strive to maintain mutual trust and close, friendly relationships.

- (1) Strive to strengthen and promote conformance with social norms, business ethics and laws.
- (2) Place first priority on assuring safety, protection against disasters and effective environmental preservation (Cooperate in "Green" environmentally friendly purchasing and procurement activities, and at the same time, each person should have a consciousness of the importance of these issues).
- (3) Conduct risk management activities such as paying attention for accurate and fair disclosure of information on assuring the delivery of safe and reliable products and taking speedy measures to deal with various contingencies
- (4) Respect for human rights and promote anti-discriminatory practice. Comply with the labor standards of the International Labor Organization (ILO) and prohibit unfair labor practices.
- (5) Protect against the disclosure of classified information, personal confidentiality and respect the rights of the third party's intellectual property.
- (6) Pay attention to biodiversity preservation.
- (7) Avoid the purchase of Minerals that are clearly involved in conflicts and human rights infringement in conflict-affected and high-risk areas (CHAHRA).

3. Supplier selection

The Company follows an open-door policy regarding its purchasing activities and globally seeks suppliers based on open, fair, impartial and equal-opportunity principles. The company selects suppliers in a rational and comprehensive manner, taking into consideration the following core considerations: 1. Globally competitive in product quality, price, delivery time and supply stability 2. Objective standards such as suppliers' management stability, reliability and technological superiority. 3. Matters as mentioned in "2. Promotion of corporate social responsibility" above

4. Development and review of the suppliers

The Company provides suppliers with the essential information necessary for transactions and also cooperates with suppliers' VA* and VE improvement activities as well as in activities related to the maintenance and improvement of product and service quality. The Company also routinely or as necessary promotes evaluation and review of suppliers' performance.

*VA: Value Analysis, VE: Value Engineering Method for developing high value new products satisfying customers and improving existing products

Related Information

> [Shin-Etsu Group CSR Procurement Guidelines](#) 

> [Supplier Hotline](#)



Shin-Etsu Chemical
Head Office
Mr. MA and Mr. JS,
Purchasing
Department

Working with suppliers to create a sustainable society

1. Please tell us about your job.

We are responsible for the procurement of electricity, gas, and raw materials such as chemical products and pulp used by Shin-Etsu Chemical.

2. What prompted you to create the "CSR Procurement Guidelines" (hereinafter referred to as the Guidelines) in 2017?

The Purchasing Department has been working on CSR procurement for a long time and had a "Basic Procurement Policy." We prepared the Guidelines to explain the "Basic Procurement Policy" in detail and to help our business partners to understand it.

The Guidelines were developed based on version 5.0 of the EICC (currently RBA)¹ Code of Conduct, which was the industry standard at the time. We added our own items, such as business continuity planning, to the document. By developing the Guidelines, we have clarified what we should keep in mind regarding CSR procurement as the Purchasing Department and what we need to ask our suppliers to do.

3. What was the focus of the 2020 revisions?

Additions and revisions to "RBA Code of Conduct Version 6.0" for 2018 were reflected in the Guidelines. In addition, the content and the text was revised in line with the update of CMRT² in 2020.

At the same time, specific examples of business continuity plans were provided to make them easier to understand.

4. Please tell us about your supply chain management plans for the future.

We have already asked our major suppliers to participate in briefing sessions and questionnaires based on these Guidelines. By expanding the scope, more suppliers can learn about them, which will lead to stable, fair, and impartial procurement activities.

5. How was procurement affected by COVID-19 infections?

Raw materials procurement from overseas was partially affected by production suspension caused by lockdown. However, our manufacturing was unaffected as we had secured substitute raw materials by doing multiple-source purchasing. While preventing COVID-19 infection cases, we managed to continue purchasing operations through remote work and staggered working hours as well as customer meetings using a web conference system.

¹EICC (currently RBA)

A CSR alliance for the electronics industry. In 2018, it was renamed to the Responsible Business Alliance (RBA). It sets standards to ensure that the work environment is safe, to treat workers with respect and dignity, to fulfil environmental responsibilities, and to implement ethical business practices in the electronics industry or industries and supply chains that use mainly electronic components.

²CMRT

A template for conflict minerals reporting created by RBA's conflict minerals free promotion initiative titled "Responsible Sourcing of Minerals Initiative." This template is an information control tool for the entire supply chain, intended to enable procurement of raw materials free of conflict minerals.

— Compliance with the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors

Staff members in charge of purchasing and procurement attend seminars on the Subcontract Act to gain an understanding of it. We also conduct regular internal audits of subcontracting transactions to ensure full compliance with the Subcontract Act. In addition, we make sure that all subcontractors that are subject to the Subcontract Act are in full compliance by periodically checking the details of existing transactions and reports on new transactions.



Internal auditing for compliance with the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors
(December 2019, Shin-Etsu Chemical Kashima Plant)

— Sustainable Procurement

In our "Basic Procurement Policy," the Group has declared our dedication to eliminating minerals from conflict-affected and high-risk areas (CAHRAs) that are clearly involved in conflicts and human rights infringement in all product procurement. We ask that all suppliers adhere to this policy, and we regularly perform studies of pertinent minerals, tracking their production all the way back to the smelting process. Furthermore, in February 2021, the Company participated in a meeting of the Roundtable on Sustainable Palm Oil (RSPO) as an associate member. The RSPO is a non-profit organization that promotes sustainable growth and use of palm oil by way of cooperation within the supply chain and open dialogue with interested parties. The Company agreed with the purpose of the RSPO and decided to participate.

— Procurement Audit

By asking suppliers to complete a supplier CSR procurement questionnaire, we confirm whether they conduct business activities in accordance with the Group's "CSR Procurement Guidelines." Additionally, we visit suppliers in Japan and overseas whenever necessary to carry out audits.

— Procurement Conferences

The Purchasing Department holds a company-wide meeting every six months with all purchasing department personnel to discuss material procurement. In this meeting, we do not only report material procurement, but we also train purchasing department personnel according to the "CSR Procurement Guidelines," check the status of CSR procurement, and learn the latest examples of CSR procurement inside and outside the Company.



Procurement conference
(March 2020, Shin-Etsu Chemical Head Office)

— Control of Chemical Substances Used as Raw Materials

The Group checks the ISO 14001 acquisition status of business partners and considers prioritizing suppliers that have an ISO certification so as to purchase materials with smaller environmental impact. When signing contracts on specifications for the supply of raw materials, we work to confirm the following:

- Compliance with relevant laws and regulations regarding the use of chemical substances that affect the environment in products and packaging materials
- Compliance with the RoHS Directive
- Substance management using SDS or chemSHERPA

Respect for human rights, the development of human resources and the promotion of diversity

Respect for human rights

Human resource development

Creating a comfortable working environment

Establishment of the Shin-Etsu Group Human Rights Policy

Human Rights Promotion Structure

Conducting Human Rights Risk Surveys

Observance of International Labor Standards

Consulting and Reporting on Human Rights

— Establishment of the Shin-Etsu Group Human Rights Policy

The Shin-Etsu Group has been engaged in business activities based on ongoing respect for human rights at all its business sites around the world. The company's commitment to respecting human rights is outlined in the Shin-Etsu Group "Human Rights Policy" on May 2019, which is implemented thoroughly in the Group and communicated outside the company.

[The Shin-Etsu Group Human Rights Policy ^](#)

The Shin-Etsu Group Human Rights Policy

Shin-Etsu Group (the "Group") engages in business based on its Business Principle, "The Group strictly complies with all laws and regulations, conducts fair business practices and creates unrivaled value for society and industry through the provision of key materials and technologies." The foundation of this is respect for human rights. The Group respects the human rights of all individuals. All our Group companies worldwide respect human rights perpetually in accordance with the international code of conduct* and actively promote the following actions to respect human rights.

Respect for Human Rights

1. Prohibition of discrimination

We do not discriminate at all on the basis of nationality, race, ethnicity, gender, religion, personal views, beliefs, age, social status, disability, sexual orientation, gender identification, labor union participation, health, marital status, political opinion, or any other status.

2. Prohibition of damaging human dignity

We do not in any case conduct sexual harassment, power harassment, maternity harassment or any other acts that damage human dignity.

3. Protection of privacy

We protect the privacy of individuals and handle personal information properly in accordance with the applicable laws and regulations of each country.

4. Respect for basic labor rights

We respect the workers' right to organize, the right of collective bargaining, and further rights given to workers to establish, maintain, and improve trust and good cooperative relationships through dialogue between labor and management.

5. Prohibition of child labor and forced labor

We prohibit our operations in all countries and regions from using child labor in accordance with the applicable laws and regulations of each country. We also prohibit the use of forced labor.

* International code of conduct

The Universal Declaration of Human Rights, ILO International Labour Standards, UN Guiding Principles on Business and Human Rights, UN Global Compact's 10 Principles, etc.

Activities for Respecting Human Rights

Activities for Respecting Human Rights

1. Human rights awareness

The people responsible for human resources in each business site and company of the Group will strive to develop the proper understanding of human rights and awareness of respect for human rights through activities including education for employees on human rights.

2. Human resources development

The Group will create an environment in which diverse individuals can work at their full capacity and equally give all employees opportunities aligned with their aptitudes to develop and utilize their abilities.

3. Working environment

The Group will make efforts to create a sound and comfortable working environment and to ensure safety.

4. Prevention of human rights infringement

The Group will make efforts to prevent the infringement of human rights in the course of business activities by conducting human rights due diligence* in accordance with the UN Guiding Principles on Business and Human Rights.

5. Measures for handling issues

If there are concerns regarding human rights infringement in our business activities, the Group will take appropriate measures promptly to resolve them.

6. Promotion of respect for human rights

The Group will encourage all people associated with the Group to comply with international standards for human rights.

* Human rights due diligence

To regularly implement the identification, evaluation, preventative/corrective measures, investigation, monitoring, and information disclosure of human rights risks in accordance with the Group's human rights policy.

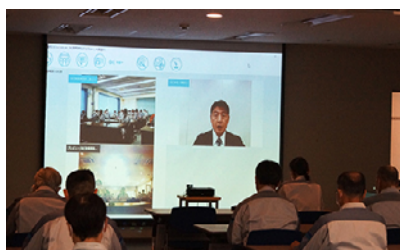
Established on May 21, 2019

— Human Rights Promotion Structure

The Human Rights Due Diligence Subcommittee established within the ESG Promotion Committee plays a central role in promoting respect for human rights. The subcommittee is engaged in overall action items associated with human rights due diligence such as the formulation of the "Human Rights Policy," survey of human rights risks for the Group, and the establishment and maintenance of a system for consulting and reporting on human rights.

In addition, the subcommittee works with the Shin-Etsu Chemical's Human Rights Enlightenment Promotion Committee to promote awareness and education of human rights. This committee holds regular human rights awareness training for directors and employees. Human rights Q & A are serialized in our internal company newspaper, and the committee asks people to submit human rights enlightenment mottos to coincide with our annual human rights week in December.

Furthermore, the company is a member of both the Industrial Federation for Human Rights, Tokyo and the Corporate Federation for Dowa and Human Rights Issue, Osaka. We discover human rights developments and obtain latest information through federation activities and training sessions held by administrative organizations to promote awareness of human rights.



Human rights awareness training
(November 2020, Shin-Etsu Chemical
Gunma Complex)



Power harassment prevention training
(February 2021, Shin-Etsu Chemical
Gunma Complex)

— Conducting Human Rights Risk Surveys

In December 2019, we began conducting human rights risk surveys with all Group companies to identify human rights risks in the Group's value chain. The survey is part of our human rights due diligence conducted in line with the UN Guiding Principles on Business and Human Rights. In FY2020, we conducted a follow-up survey before identifying risks for the Group. Henceforth, we will identify and address serious human rights risks in the Group based on the survey result.

— Observance of International Labor Standards

The Group supports the Universal Declaration of Human Rights and respects the human rights in accordance with the international labor standards through the International Labour Organization (ILO). In order to confirm the status of human rights compliance, we distribute questionnaires to consolidated companies every year to investigate whether items related to respect for human rights¹, labor management, and employment are properly implemented in accordance with the laws and regulations of each country and region. In addition, when building a new plant, its impact on the region in terms of human rights is taken into consideration.

¹ Confirmation Items concerning Respecting Human Rights Prohibition of child labor, proper working hours, decent wages, proper employment contract in writing, prohibition of inhuman treatment, prohibition of discrimination, freedom of association

— Consulting and Reporting on Human Rights

Our group has the following three contact points:

• [Compliance Consultation Office](#)

Officers, employees, advisors, contract employees, part-time employees, and temporary employees can report by email or phone.

• [Dial Shin-Etsu](#)

Domestic employees, advisors, contract employees, part-time employees, and temporary employees can consult anonymously by phone.

• [Supplier Hotline](#)

Our Group's suppliers can report by e-mail.

Respect for human rights, the development of human resources and the promotion of diversity

Respect for human rights

Human resource development

Creating a comfortable working environment

Education/Training and Personal Development

Performance-based Personnel Evaluation Systems

Promotion of Diversity

Employee Initiatives

— Education/Training and Personal Development

The Shin-Etsu Group supports employees' growth through various training systems, which include training for different staff rank, global communication training, auditing student system, environmental education, safety education, and mental health education. As part of digitization measures, AI training also started in FY2021.

Global Communication Training

The Group is expanding its business activities throughout the world. Competency in a foreign language is an essential skill for smooth operations. Therefore, the company offers the following kinds of training:

- English language training (meeting skills course and presentation skills course)
- Cross-cultural communication training
- Chinese conversation classes

Auditing Student System for Employees

In 1962, Shin-Etsu Chemical established an auditing student system for employees. Under this learning system with the goal of improving the workforce, up to about 10 operators from manufacturing sites of the Group are chosen each year to study at universities for one year. In the 58 years since the system was introduced, a total of 547 employees have completed the program and are now active in various workplaces.

Training system list

	Training for different staff grades	Specialized education	General education	Special education	Environment and safety education	Quality control education	Six Sigma education
General manager level	Advanced management training S staff group/ M staff group training	<ul style="list-style-type: none"> Patent training Training for adaptation to internationalization 					
Section manager level	Middle management training	English language training, meeting skills course I/II	Mental health seminars	Course for management development training (external training)	Specialized education in environmental control and safety	QC ¹ master course	Black belt training
Junior manager level	Line management Staff management Leader training	English language training, presentation skills course I/II	Human rights awareness training		Supervisor education	QC intermediate course	Green belt training
Regular employees	Junior leader training New employee second-phase training New employee induction training	Chinese conversation Classes Intercultural communication training		Auditing student system (1 year)	Safety education Special education Basic education New recruit education	QC basic course	

— New lecturing style in COVID-19 calamity

Ms. D, lecturer in Chinese

I have been in charge of Chinese-language classes at Shin-Etsu Chemical since about 20 years ago. Affected by the global spread of COVID-19 that occurred at the start of 2020, classes took the form of online sessions, an unprecedented format, instead of in-person sessions. At first, the classes were slow to progress partly because I was not accustomed to the online format while being unable to meet learners in person, which made me feel lonesome. I would like to express gratitude to the students who worked hard, undaunted in the face of that hardship.

I would very much like to see the COVID-19 crisis end in FY2021 and hold classes with students in person. I will strive to teach Chinese in an easy-to-understand way so that students can use it effectively for work and travel. Your help and support is appreciated.



Oline Chinese languages classess
(May 2021, Shin-Etsu Chemical Head Office)

— Performance-based Personnel Evaluation Systems

The Group has introduced an employee evaluation system that emphasizes their ability and work performance. This system aims to increase employees' motivation by reflecting their performance and attitude to the benefits that they will receive, and evaluates how they meet their challenges to achieve higher goals.

To manage the personnel system in a fair and appropriate manner, evaluation training is provided for all managers who conduct performance review, so that they can carry out personnel evaluations fairly. Transparency is increased by informing evaluation standards to employees. In addition, there is a system of interviews between an evaluator and a direct report to ensure that they can communicate successfully. During interviews, each staff member and their immediate supervisor use Communication Sheets to ensure mutual awareness of expectations and set half-year goals. Furthermore, feedback on progress is given for further development of skills.



Active Promotion of Diverse Human Resources

The Group hires local employees at overseas Group companies and hires foreign nationals in Japan. The entire Group is also working to proactively employ people with disabilities and create environments where it is easy for them to work. Furthermore, in order to promote women's participation and advancement, the Group set a five-year goals in FY2016. From FY2021, we set new five-year goals and started to work on them.

Goals to Promote Women's Participation and Advancement

In the next five years from FY2016, the company aims to achieve the following:

1. The rate of hiring women will be 40% for administrative positions and 10% for engineering positions.
2. The number of women in managerial positions, including junior manager level, will be doubled compared to the number in FY2014.

In the next five years from FY2021, the company aims to achieve the following:

1. The rate of hiring women will be 40% for administrative positions and 10% for engineering positions.
2. The number of women in managerial positions, including junior manager level, will be quadruple compared to the number in FY2014.

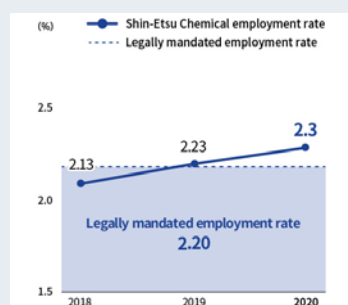
Changes in the number of female managers compared to the 2014 level

April 2017	April 2018	April 2019	April 2020	April 2021
Approx. 150%	Approx. 170%	Approx. 220%	Approx. 230%	Approx. 260%

Changes in the rate of hiring women

	April 2016	April 2020	Five-year average
Administrative position	43.8%	35.7%	39.7%
Engineering position	7.6%	6.1%	7.2%

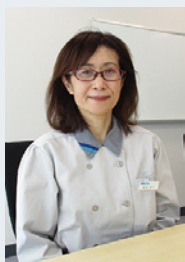
Employment Rate of Persons with Disabilities



Wheelchair ramps (Shiin-Etsu Chemical Gunma Complex)

* The legally mandated employment rate has been 2.3% since March 2021.

— Employee Initiatives



Shin-Etsu
Chemical
Ms. SN, Silicone-
Electronics
Materials
Research Center

Working as a manager who considers the entire organization

1. Please tell us about your background and your job.

After joining the company, I was involved in research and development at the Silicone-Electronics Materials Research Center. Subsequently, my work was changed to the legal management of chemical substances, which puts me in the position to help researchers. I am currently the leader of the team.

2. What did you think when your supervisor mentioned promoting you to a manager?

I have had many years of experience in this work, so I thought that it would happen eventually. When my immediate supervisor was transferred a few years ago, I was mostly prepared to take on the role of team leader.

3. Have you changed as a manager?

The biggest change is having my team. Moreover, since becoming a team leader, I have come to think about the organization as a whole compared to before, and I think that my attitude towards work and my sense of responsibility have changed.

4. We have various personnel systems. What kind of systems do you use to maintain a work-life balance?

I have used the childcare support system twice. Currently, two female in my team are using the short-time work system. I think this is a good system that enables women to continue working without abandoning their careers due to childbirth and childcare. I also believe that the flex-time system and the half-day vacation system are useful to everyone, not just those who are raising children. I also use them to enrich my personal time.

5. What kind of career do you want to have in the future?

Every year, outstanding women join the workplace to which I belong. I hope I can be a role model for them.

6. Please give a message to all the working women who will follow you in the future.

As you are well aware, women in Japan do not play an active role compared to other countries. The government is advocating the promotion of women's participation in the workplace, but I think not much progress has been made. There are still barriers to awareness and inadequacies in the systems around us, so we should work together.

Raising Retirement Age

In April 2019, the company raised the retirement age from 60 to 65 after continuing discussions with the Shin-Etsu Chemical Labor Union. It is the first time that such a system was implemented at a major Japanese chemical company. After turning 60, they will receive 80% of the salary received at age 59. We will also raise salaries and promote people based on personnel evaluation.

By adjusting the employment environment after the age of 60, skilled workers at manufacturing sites will be able to pass on the technology and their experience to the next generation.

* Personnel subject to human resource development and promotion of diversity in the Group are the employees of and loaned employees from Shin-Etsu Chemical.

Related Information

[> ESG Data](#)

Respect for human rights, the development of human resources and the promotion of diversity

Respect for human rights

Human resource development

Creating a comfortable working environment

System for Work-life Balance

Nursing Care Leave System

Welfare and Benefits

Labor-management Relations

— System for Work-life Balance

Childcare Support System

The Group supports employees' childbirth and childcare. The Company has published the "Childbirth and Childcare Guidebook," which summarizes the governmental systems and procedures related to childbirth and childcare. Employees can use the company's childcare leave system for children up to three years old. About 30 employees on average use the childcare leave system in the company and consolidated companies in Japan. In addition, we grant a paid leave of five days to an employee whose spouse gives birth. Employees are allowed to use the short-time work system, which shortens their working hours for a maximum of two hours a day. This system can be used until their children graduate from elementary school. Furthermore, we will promote use of the teleworking system.

Childcare is supported according to local laws and regulations in overseas Group companies.

Main System for Childcare Support (Shin-Etsu Chemical)

	Childbirth	Three years old	Entering elementary school	Graduating from elementary school
Maternity leave	Six weeks before and eight weeks after the childbirth			
	Three days when a spouse has childbirth			
Childcare leave				
	* Legally 1.5 years old			
Sick/injured child care leave	Five days per year when having one child 10 days per year when having two children			
	* As per the legal requirements			
General manager level				
	* Legally three years old			
Legal	Progressive measures at Shin-Etsu Chemical			

* From October 2017 onwards, employees can take childcare leave until their child reaches the age of two, provided they meet certain conditions.

Number of Employees Who have Taken Childcare Leave

	FY2018		FY2019		FY2020	
	Male	Female	Male	Female	Male	Female
Shin-Etsu Chemical (Non-consolidated)	0	11	1	8	7	8
Consolidated in Japan	1	35	2	26	12	24
Consolidated	90	100	71	91	84	66

* The length of childcare leave differs from country to country, because the program is based on local laws.

— Nursing Care Leave System

Nursing Care Leave System

The Group has a nursing care leave system as shown in the chart on the right. The system enables employees to work in the company while caring for elders.

The "Nursing Care Guidebook" is issued in which all of the necessary information on our nursing care system and care insurance is provided. Furthermore, we started health care and nursing support services in FY2014 to provide counseling by external experts.

Main System for the Nursing Care System (Shin-Etsu Chemical)

	93 days	One year
Care leave		
	* Legally 93 days	
Measures such as short time work, etc. *		
	* Legally 93 days	
Time off for nursing care	Five days per year when having one person to be cared for 10 days per year when having two persons to be cared for	
	* As per the legal requirements	
* Flextime system, measures to start/finish early or late		
Legal	Progressive measures at Shin-Etsu Chemical	

Number of Employees Who Have Taken Nursing Care Leave

	FY2018	FY2019	FY2020
Consolidated in Japan	0	3	2

– Welfare and Benefits

Saved Holidays System

If the annual paid leave granted in accordance with labor regulations has expired without being taken, a certain number of days can be treated as saved holidays. Employees may use these saved holidays for nursing care, for injury or illness, for volunteer work for regional disasters, or for donating organs or bone marrow transplants.

Counseling Hotline for Employees

As a counseling service for troubles at work or other issues, we have set up Dial Shin-Etsu, which is staffed by external counselors, who are specialists from outside of the company. Consultations are received anonymously and treated with strict confidentiality, but if requested by the consulter, the counselor will contact the Personnel and Labor Relations Department to discuss possible solutions.

Shinkansen Commuting Allowance System

Since 1989, the Group has allowed employees to commute by Shinkansen at company expense. This system allows employees who relocate from Gunma Fukushima Prefectures, where our plants are located, to work in the Tokyo area without changing their lifestyles or educational environments. This also, promote employees to own houses.

As of March 2021, 71 employees have used this system.

Other Systems

The Dr. Kanagawa Scholarship was established in June 2012 for employees to study at Clark College in Washington, USA, for one year. This scholarship was created due to the relationship of trust that was built over many years between the college and our Chairman, Dr. Kanagawa.

In addition, we have established asset-building schemes, an employee shareholding system, and mutual aid groups to provide support for weddings, childbirths, and sudden hospitalizations of family members.

Welfare and Benefits Facilities

We have dormitories and company housing near the head office and plants for employees who live outside the commutable area. We also have directly operated recreational facilities in Kanagawa, Shizuoka, Fukushima, and Niigata Prefectures. The Group's employees can use these facilities with family and friends. Furthermore, we have partnerships with external recreational facilities, and subsidies are given to the users.



Shin-Etsu Chemical Hakone Shinsensou
(Kanagawa Prefecture)

— Labor-management Relations

The company engages in various dialogues with the Shin-Etsu Chemical Labor Union to promote mutual understanding between labor and management. The Central Labor-Management Meeting is held once a month at the head office and is attended by top management. They engage in thorough discussions with the labor union on subjects such as the management policy, overview on individual businesses, and personnel systems. Each business site also holds a monthly local labor meeting with the local branch of the Shin-Etsu Chemical Labor Union.

Repeated dialogues and discussions between labor and management deepen mutual understanding and trust and facilitate the expansion of business operations in which staff and management can come together to respond quickly to the changing business environment.

* Personnel subject to human resource development and promotion of diversity in the Group are the employees of and loaned employees from Shin-Etsu Chemical.

Related Information

[> ESG Data](#)

Respect for and protection of intellectual property

Intellectual Property Management ▾	Employee Initiatives (Intellectual Property Management) ▾	Initiatives for Information Asset Management ▾	Employee Initiatives (Information Asset Management) ▾
Protection of Personal Information ▾	Cyber Security ▾		

— Intellectual Property Management

The Company has established the "Basic Regulations for Intellectual Properties," which stipulate the regulations regarding the acquisition, management, and utilization of intellectual property assets. We acquire useful and highly original intellectual property assets based on these regulations and we protect them from infringement by third parties. These regulations also require us to respect all intellectual property rights of third parties.

In addition, employees who have devised useful inventions, improvements, and devices at work have been awarded under the following systems:

Actual Compensation Awards

A system to recognize and award employees who have created an invention or idea which greatly contributed to the company in the form of patents

Multiple Inventor Awards

A system to recognize employees who have made a large number of inventions and acquired a large number of patent rights in the company

Related Information

[> ESG Data](#)

— Employee Initiatives



Shin-Etsu
Chemical, Head
Office
Mr. KY, Patent
Department

Working to protect the intellectual property assets of both our company and third parties

1. Please tell us about your job.

I am mainly responsible for acquiring the patent rights of intellectual property assets such as inventions, which are the result of our R&D activities, and for examining the content of third-party intellectual property rights.

2. How do you protect our intellectual property assets?

We protect intellectual property assets, such as inventions obtained through research and development, against infringement by a third party mainly by acquiring patent rights. Our technologies are developed worldwide, so we promote the acquisition of rights not only in Japan but also in other countries around the world. In addition, if the intellectual property asset that we acquired is not something that should be disclosed, the Group strives to protect it in a manner that is deemed appropriate, such as concealing it as know-how.

3. Please tell us about your initiatives to avoid infringing on the intellectual property rights of other companies.

First, I examine publicly disclosed patent releases of third parties related to our operations and new businesses. Then we hold regular review meetings with relevant divisions to closely examine the content of such information and share it with the participants of the meetings. Through these measures, R&D activities can be promoted to protect and respect the intellectual property rights of third parties, so that we can determine the way to move forward without infringing their rights and complete application procedures with the patent office where necessary.

— Selected as a Derwent Top 100 Global Innovator™ for the Tenth Consecutive Year

For the tenth consecutive year, the company has been awarded the Top 100 Global Innovator™, which identifies and celebrates the world's most innovative companies and organizations.

The award is granted by Clarivate (United States)—a global information services company that analyzes intellectual property assets and patent trends based on its patent data—to the world's leading companies and organizations that are engaged in protecting original inventions with intellectual property rights, and successfully commercializing them.



— Initiatives for Information Asset Management

For daily business operations and smooth communication, it is extremely important to use information assets effectively. On the other hand, the risk of information being leaked or otherwise mishandled is growing due to the inappropriate management of information assets. For this reason, all personnel who handle information are required to understand the importance of information assets and manage and use them properly. In the case of an emergency, we must prevent it from becoming worse and affecting other operations, and make the greatest possible effort to maintain information security on a Group-wide basis. Regulations are set under the "Information Asset Management Basic Policy" to protect, utilize, control, and manage information assets.

Furthermore, related rules and regulations such as "Information Asset Management Standards" stipulate the details concerning the handling, management, retention period, and discarding of all information related to our customers and suppliers. In addition, we have formulated the "Standards for Preventing Technology Leaks" in order to prevent the outflow of technologies.

We also regularly carry out training related to information asset management, check the status of compliance with the "Information Asset Management Basic Policy" and other rules, and perform internal audits.

— Employee Initiatives



Skyward Information
System Head Office,
Mr. MO & Mr. TK

Increasing employees' awareness of network attacks

1. Please tell us about your job.

We are in charge of the security management of the networks and servers of the Shin-Etsu Group.

2. How do you work on cybersecurity?

As a division in charge of cybersecurity, we put in place a scheme to engage in multiple-layer defense for security measures and detect intrusions. During the FY 2020, we upgraded the cybersecurity of all Shin-Etsu Group companies to a level on par with Shin-Etsu Chemical. Moreover, we elevated sensitivity to newest ransomware and took necessary actions. In addition to defending with systems, we strive to raise awareness on the part of system users.

3. What kind of training are you conducting Specifically?

Every year, we conduct training to recognize the dangers of targeted email attack. The training is conducted at Shin-Etsu Chemical and its group companies 4 times a year by sending an email to all employees describing the latest method of targeted email attack. After the training is completed, explanatory materials for targeted attack emails are distributed to all participants, and the participants who have opened two or more emails receive additional training individually. Email-based attacks have become increasingly sophisticated and will continue to occur going forward. We will gradually introduce the necessary measures in terms of the system and raise the awareness of users.

— Protection of Personal Information

In order to properly protect personal information in accordance with the Act on the Protection of Personal Information, we have established a "Privacy Policy," which is available on our website. We also educate our staff on laws and regulations and hold lectures regarding personal information protection in trainings for each staff rank in order to ensure the appropriate handling and protection of personal information.

Group companies in the EU area comply with the EU's General Data Protection Regulation (GDPR),¹ which came into force in May 2018.

¹ General Data Protection Regulation (GDPR)

The General Data Protection Regulation stipulates on the handling and transfer of personal information. EU member countries had their own regulations to protect personal data, and these regulations were unified under the General Data Protection Regulation in May 2018.

— Cyber Security

In preparation for cyber-attacks, we have bolstered our surveillance system with an intrusion detection service that operates 24 hours a day, 365 days a year, and received security diagnoses from external contractors. We also continue to take necessary security measures.

We have deployed a system to prevent targeted email attacks. In addition to measures for preventing intrusions, we are strengthening our measures for detecting and analyzing attacks. Furthermore, we have separated the information network from the control network to minimize the impact of any incidents.

We also conduct targeted email attack drills every year to raise the security awareness of employees while establishing a system to respond to possible incidents.

Contribution to industry and social initiatives

Fundraising for U.N. World Refugee Day ▾	Summer School for Elementary School Student ▾	Traffic post guard activities ▾	Donation of protective clothing and antiseptic solution to the community ▾
Support for Eradicating Poverty in Africa ▾	Contribution to Society Activities at Overseas Group Company ▾	Employee Initiatives ▾	

— Fundraising for the U.N. World Refugee Day



Japan

Since 2006, the Group have donated the money to the Office of the United Nations High Commissioner for Refugees (UNHCR) for the World Refugee Day (June 20), which was established by the United Nations. We have supported world refugees who have been driven out of their homes due to conflict, persecution, and disaster by donating the money to the UNHCR. Since 2012, we have continued to make matching donations in which the company contributes the same amount as donations from employees.



— Summer School for Elementary School Students (Naoetsu)



Japan

The Naoetsu Plant has held an annual summer school, organized mainly by new employees, for local children in the upper grades of elementary school since 1975. It is a two-hour program, with the first half for learning and the second half for recreational activities. To prevent infection with the COVID-19, the event was not held in FY2020.

*In FY2020, it was not implemented due to the COVID-19.

— Traffic Safety Activities (Shirakawa Plant)

Japan

The Shirakawa Plant conducts traffic safety activities in conjunction with the Spring National Traffic Safety Campaign every year. It was held at two entrances of the plant, and greet to commuting employees and children who were going to school, remind people of traffic safety.



— Donation of protective clothing and antiseptic solution to the community (Shin-Etsu Handotai, Shin-Etsu Chemical Naoetsu, etc.)



Japan

Shin-Etsu Handotai's domestic plants, Naoetsu Electronics Co., Ltd., Nagano Electronics Industrial Co., Ltd., and Mimasu Semiconductor Industry Co., Ltd. donated approximately 1700 protective clothing, dustproof clothing, dustproof hood, dustproof shoes to local medical institutions. Shin-Etsu Handotai and others use these for work in clean rooms and have a certain level of inventory. We have donated these to medical institutions through prefectural offices and medical associations in order to help them make use of it in the healthcare field where they are struggling to measure infectious diseases. In addition, Shin-Etsu Chemical Naoetsu donated 10 tons of sodium hypochlorite solution, which is manufactured at the plant, to Joetsu City, Niigata Prefecture. Sodium hypochlorite is used for disruption to prevent the outbreak of a COVID-19, and has been distributed to daycare centers, kindergartens, elementary and junior high schools, and public facilities in Joetsu City.

— Support for Eradicating Poverty in Africa

Japan

Shin-Etsu Chemical supports the activities of SDGs Promise Japan (SPJ), a non-profit organization working to eradicate poverty in Africa and other regions in order to achieve the Sustainable Development Goals (SDGs). Through the training program in Africa organized by MPJ Youth*, an organization under SPJ, we donated our PVC wraps and reusable bags to local students. In addition, when SPJ had a booth at the 7th Tokyo International Conference on African Development (TICAD7) in Japan in 2019, we provided PVC wraps for distribution to visitors.

*MPJ Youth

An organization of students who support the activities of SPJ



— Contribution to Society Activities at Overseas Group Company



Social Contribution Activities of Shintech Inc.

Since launching the Shintech Addis Plant in Louisiana in 2000, the company has been actively involved in organizations, sponsorships, leadership development, and civic activities that support the development and success of the communities in which we live and work.

Several Shintech employees and contractors have continuously participated in the Safety Town program since 2007. Safety Town is a safety program designed for kindergartners to educate them in the proper ways of crossing streets, riding bikes, handling emergencies (such as home fires) and other safety-related issues.

Furthermore, the employees of Shintech Louisiana, LLC, SE Tylose USA, Inc. and many of the plant contractors have collected toys during the Christmas holidays to donate to a children's hospital in Baton Rouge. They have made the annual delivery of toys to the hospital since 2009. With Shintech and SE Tylose's help, the playroom of the hospital is now a special place that is stocked with games, toys, and electronic equipment for children of all ages to enjoy. Community involvement is important to the long-term success of Shintech. It benefits the long-term well-being of our employees, our families, our friends, and those who will both join us and succeed us as we continue to grow. As a good neighbor, it is our privilege to be a part of this community, and we work hard to support those around us.



Mr. RK, Skyward
Information
System
Isobe branch

Promoting the Annaka Festival with local residents

1. Please tell us about the Annaka Festival.

The Annaka Festival is held every other year in mid-October in Annaka City, Gunma Prefecture, where the Shin-Etsu Chemical Gunma Complex is located. This is a large festival where Ohayashi instrument players and parade floats from six districts of Annaka City parade through the town for two days. On the first day, floats parade through each district, and on the second day, floats from all districts gather for celebrations and ceremonies. Stage events include Japanese drum performances and dance performances by local high school students. At the end of the festival, powerful fireworks color the night sky beautifully.

Six people from the Shin-Etsu Chemical Gunma Complex participate in the management of the Annaka Festival. Many employees from the Group companies in this area participate in the management of the festival as well. I belong to the Festival Committee. We start preparing about two months before the festival and we do many things, such as putting up lanterns and posters, and preparing the equipment to be used at the festival. On the day of the festival, we guide general vehicles so that the floats can parade safely. Since there are many elementary school students who play Ohayashi instruments on the floats and small children who pull the floats, ensuring the safety around the floats is also an important task for Festival Committee members.

2. How do you feel about managing the festival?

I participated as an Ohayashi instrument player in this Annaka Festival when I was an elementary school student. Now that I am managing this festival as an adult, I learned about the difficulty of management and was able to enjoy it more than before. Participation in festivals helps unite local residents, companies like us, and a variety of organizations. It also gives me the opportunity to be involved in passing down traditional festivals and communicating the splendors of the area while revitalizing the region. By having employees of all ages participate in such local festivals, I believe that we can share their desire to make the festival a success, as well as their heartfelt smiles and excitement, and I believe that we can create a solid bond. We participate not only in festivals but also in local activities, such as cleaning and garbage picking. These efforts have also led to the revitalization of local communities. As a member of the local community, I would like to continue doing such social contribution activities.

*In FY2020, it was not implemented due to the COVID-19.

Accurate and timely information disclosure and communication with stakeholders

Information Disclosure



Communication with Stakeholders



Employee Initiatives



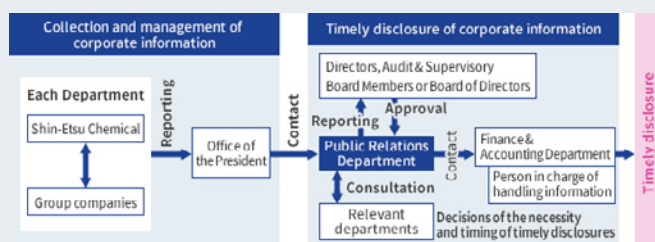
— Information Disclosure

The Group believes that the appropriate and timely disclosure of company information boosts the understanding of stakeholders and leads to the creation of a fair market evaluation.

The company has disclosed financial information in accordance with the Financial Instruments and Exchange Act and the regulations regarding information disclosure set by the stock exchange. Regarding the collection, management, and timely disclosure of corporate information, the company formulated internal regulations such as the "Regulations on Timely Disclosure of Corporate Information" and the "Rules on Regulations of Insider Trading." We have announced these regulations to all of the departments in the company and Group companies to promote seamless and timely disclosure.

For non-financial information, we disclose information voluntarily, such as posting information on the company's website, publicizing it through the news media, and providing an annual report, financial statements and other reports.

State of the internal system for timely disclosure



General Meeting of Shareholders
(June 2020, Shin-Etsu Chemical Head Office)

— Communication with Stakeholders

The Group communicates with stakeholders actively through a variety of methods and opportunities. We believe that this effort contributes to the sustainable growth of the Group and increases corporate value.

Major Communication Method and Opportunities

Shareholders and Investors
<p>General Shareholders' Meeting</p> <p>Presentations of earnings and conference calls for analysts and institutional investors (four times in FY2020)</p> <p>Plant tours for analysts and institutional investors / Business briefing session (once in FY2020)</p> <p>One-on-one meetings with analysts (about 290 times in FY2020)</p> <p>Small meetings for investors hosted by securities companies (seven times in FY2020)</p> <p>Presentations to individual investors (once in FY2020)</p> <p>Information provided on the company website, annual report, etc.</p>
Customers
<p>Day-to-day communications by sales representatives</p> <p>Information provided on the company website, exhibitions, etc.</p>
Suppliers
<p>Day-to-day communications by the Purchasing Department</p> <p>Supplier Hotline</p>
Local communities
<p>Communication with organizations such as local governments</p> <p>Participation in local events</p>
Employees
<p>Communication and consultation with labor unions</p> <p>Information provided on the company magazine and intranet</p>



Chemical material Japan 2020
(October–November 2020, Shin-Etsu
Chemical Headoffice)

— Employee Initiatives



Shin-Etsu
Chemical Head
Office
Mr. TM, Silicone
Division

Communicating the benefits of silicone by interacting with customers

1. Please tell us about your job.

I am in charge of the sales promotion of silicone products. I mainly plan and operate exhibitions, and produce product catalogs and PR videos.

2. What are your thoughts on spreading our silicone throughout the world?

At a time when COVID-19 made it difficult to meet customers in person to outline a product, we enabled them to find a needed product by using the search function in our official website. While periodically holding an online product briefing session for distributors, we also have online meetings with customers.

3. What do you value in your communication with customers?

It is important for me to listen carefully to our customers and find out the issues that they are facing now and future development themes.

4. Let us know any product you want to highlight to customers now.

We have many new products, that help lower environmental load by conserving resources and saving energy.. For example, silicone release agents, which enable the carrying out of curing that results in the lowering of the amount of platinum usage by about 1/2 compared to that of conventional usage, contribute to resource conservation.. For details, see our website for silicones products.

> https://www.shinetsusilicone-global.com/news/2020/05_2.shtml 

5. Please tell us if you have a story of customers becoming interested in silicone as a result of your sales promotion activities.

On April 1, 2021, we revamped our website for silicone products. We sent an email with the information on a newly set-up website to customers who had previously visited our exhibition event. This generated a significant response with over 700 accesses being recorded on the day the email was sent. This was an event in which we were surprised by the effectiveness of email transmission to distribute information. We would like to keep actively distributing information on our silicone products by using the web.

— Corporate Governance

Aspect	Classification	Scope	Unit	FY2018	FY2019	FY2020
Number of Board Directors	Directors	Non-consolidated	Persons	22	21	21
	Outside directors	Non-consolidated	Persons	4	4	5
	Women on the board	Non-consolidated	Persons	0	0	0
Number of Audit & Supervisory Boards	Audit & Supervisory Boards	Non-consolidated	Persons	5	5	5
	Outside Audit & Supervisory Boards	Non-consolidated	Persons	3	3	3
	Women on the Audit & Supervisory Boards	Non-consolidated	Persons	0	0	0
Structure of Officers' Remuneration Committee	Independent outside directors ratio	Non-consolidated	%	20	20	20
Remuneration of directors	Excluding outside directors	Non-consolidated	Millions of yen	1,635	1,696	1,637
Remuneration of Audit & Supervisory Boards	Excluding the Audit & Supervisory Boards	Non-consolidated	Millions of yen	40	36	36
Remuneration of Outside directors and the Audit & Supervisory Boards		Non-consolidated	Millions of yen	149	149	165
Payments of income taxes		Consolidated in Japan	Millions of yen	69,274	78,493	76,491
		Consolidated in overseas	Millions of yen	52,314	29,331	24,910
Amount of political contributions		Non-consolidated	Millions of yen	2	0	2

*As of the general meeting on June 29, 2021, the number of directors has changed to 11 (including 5 outside directors).

*Please refer to IR information for details on financial information.

— The foundation of all activities: legal compliance, fair corporate activities

Aspect	Classification	Scope	Unit	FY2018	FY2019	FY2020
Number of violators of the Anti-Bribery Regulations		Consolidated	Persons	0	0	0
Total costs of penalties regarding corruption		Consolidated	Yen	0	0	0

— Employees and contractors health and safety

Aspect	Classification	Scope	Unit	FY2018	FY2019	FY2020
Management	ISO45001/OHSAS18001 certification ratio ¹ (Employees)	Consolidated manufacturing companies	%	-	-	25
Occupational health and safety	Number participants in safety training (Total number of persons)	Non-consolidated	Persons	11,774	19,411	32,527
		Consolidated	Persons	28,013	39,328	46,998
	Lost-time incident rate ²	Consolidated in Japan		0.22	0.28	0.19
		Industry average (JCIA)		0.30	0.42	0.28
	Rate of accidents not accompanied by an of absence a day ²	Consolidated in Japan		0.84	0.77	0.43
	Lost-time injuries severity rate ²	Consolidated in Japan		0.01	0.02	0.01
		Industry average (JCIA)		0.03	0.01	0.11
	Number of work-related employee fatalities	Consolidated	Persons	0	0	0

1 ISO45001/OHSAS18001 certification ratio

The plants which does not have certification has a occupational health and safety management system the same level as ISO45001/OHSAS18001.

2 Lost-time incident rate and Rate of accidents not accompanied by an of absence a day and Lost-time injuries severity rate

These were calculated in calender year.

— Energy-saving, resource-saving and reduction of the environmental impact

Aspect	Classification	Scope	Unit	FY2018	FY2019	FY2020
Management	ISO14001 certification ratio ¹ (Plants)	Non-consolidated	%	100	100	100
		Consolidated plants	%	70	64	66
	Total costs of environmental fines and penalties	Non-consolidated	Yen	0	0	0
		Consolidated in Japan	Yen	0	0	0
Response to climate change	GHG Scope1 emissions	Consolidated	Thousand tons of CO ₂	1,679	1,774	1,831
	GHG Scope2 emissions	Consolidated	Thousand tons of CO ₂	4,280	4,342	4,261
	GHG Scope3 emissions ²	Consolidated	Thousand tons of CO ₂	11,030	11,089	10,208

Water resource conservation	Water use ³	Non-consolidated	Million m ³	436	444	447
		Consolidated	Million m ³	2,216	2,278	2,475
	Water withdrawals	Non-consolidated	Million m ³	19	21	21
		Consolidated	Million m ³	182	183	182
	Water recycle	Non-consolidated	Million m ³	416	423	426
		Consolidated	Million m ³	2,034	2,095	2,293
	Water recycle ratio	Non-consolidated	%	96	95	95
		Consolidated	%	92	92	93
	Water discharge	Non-consolidated	Million m ³	20	21	21
		Consolidated	Million m ³	174	178	170
Air emissions	Soot	Non-consolidated	t	18	17	19
		Consolidated	t	71	65	37
	NOx	Non-consolidated	t	508	476	448
		Consolidated	t	961	944	925
	SOx	Non-consolidated	t	24	26	12
		Consolidated	t	146	141	145
	VOC ⁴	Non-consolidated	t	293	258	238

1 ISO14001 certification ratio

The plants which does not have ISO14001 certification has a occupational health and safety management system the same level as ISO14001

2 GHG Scope3 emissions

The total GHG Scope 3 emissions has considerably increased because the Group has started disclosing GHG emissions in the downstream supply chain from FY2016.

3 Water use

Amount of water withdrawals and water recycle

4 VOC

VOC emissions increased since revised estimated object substance from FY2017.

*Please refer to the [Environmental Data](#) for more details on environmental data.

— Product quality improvements and product safety control

Aspect	Classification	Scope	Unit	FY2018	FY2019	FY2020
Product safety training	Number participants (Total number of persons)	Non-consolidated	Persons	11,774	19,411	32,527
		Consolidated	Persons	21,170	31,445	42,933

— Respect for human rights, the development of human resources and the promotion of diversity

Aspect	Classification	Scope	Unit	FY2018	FY2019	FY2020
Employees	Number of employees by region	Japan	Persons	8,381	8,665	8,748
		Asia/Oceania	Persons	8,689	9,203	10,262
		Latin America	Persons	0	0	0
		United States	Persons	3,149	3,361	3,474
		Europe	Persons	1,516	1,554	1,585
		Consolidated	Persons	21,735	22,783	24,069
	Number of employees (male)	Consolidated	Persons	15,770	16,356	16,840
	Number of employees (female)	Consolidated	Persons	5,965	6,427	7,229
	Turnover rates	Non-consolidated	%	0.9	0.7	1.2
		Consolidated	%	13.0	11.0	12.6
	Voluntary turnover rates	Non-consolidated	%	0.7	0.7	1.0
		Consolidated	%	12.7	10.8	12.1
Human rights	Number of child labour	Consolidated	Persons	0	0	0
	Number of forced labour	Consolidated	Persons	0	0	0
Diversity	Employment rate of persons with disabilities	Non-consolidated	%	2.13	2.23	2.3
	The number of women in managerial positions including junior manager level	Non-consolidated	Persons	41	43	49
		Consolidated	Persons	392	433	517
Work-life balance	Number of employees who have taken childcare leave ¹ (female)	Non-consolidated	Persons	11	8	8
		Consolidated	Persons	100	91	66
		Consolidated in Japan	Persons	35	26	24
		Consolidated in overseas	Persons	65	65	42
	Number of employees who have taken childcare leave (male)	Non-consolidated	Persons	0	1	7
		Consolidated	Persons	90	71	84
		Consolidated in Japan	Persons	1	2	12
		Consolidated in overseas	Persons	89	69	72
	Number of people obtaining nursing care leave	Consolidated in Japan	Persons	0	3	2

¹ Number of employees who have taken childcare leave

The length of childcare leave differs from country to country, as the program is based on local law.

— Respect for and protection of intellectual property

Aspect	Classification	Scope	Unit	FY2018	FY2019	FY2020
Patents acquired	Japan	Main consolidated manufacturing companies ¹	Number of patents	566	527	466
	Overseas	Main consolidated manufacturing companies	Number of patents	1,190	1,339	1,363
	Asia/Oceania	Main consolidated manufacturing companies	Number of patents	540	587	614
	North America	Main consolidated manufacturing companies	Number of patents	219	204	259
	Europe	Main consolidated manufacturing companies	Number of patents	427	538	482
	Other	Main consolidated manufacturing companies	Number of patents	4	10	8
	Total	Main consolidated manufacturing companies	Number of patents	1,756	1,866	1,829
Patents held	Japan	Main consolidated manufacturing companies	Number of patents	7,386	7,546	7,350
	Overseas	Main consolidated manufacturing companies	Number of patents	12,403	13,162	13,352
	Asia/Oceania	Main consolidated manufacturing companies	Number of patents	5,585	6,019	6,120
	North America	Main consolidated manufacturing companies	Number of patents	3,093	3,126	3,191
	Europe	Main consolidated manufacturing companies	Number of patents	3,678	3,959	3,973
	Other	Main consolidated manufacturing companies	Number of patents	47	58	68
	Total	Main consolidated manufacturing companies	Number of patents	19,789	20,708	20,702

¹ Main consolidated manufacturing companies
This is subject to consolidated manufacturing companies.

— Contribution to industry and social initiatives^a

Aspect	Classification	Scope	Unit	FY2018	FY2019	FY2020
Total Amount of donations		Consolidated	Millions of yen	118	62	60



「信越化学サステナビリティレポート2021」

第三者検証 意見書

2021年6月25日

信越化学工業株式会社

代表取締役社長 斉藤 恭彦 殿

一般社団法人 日本化学工業協会

レスポンシブル・ケア検証センター長

尾崎 智

■ 検証の目的

本検証は、信越化学工業株式会社が作成した「信越化学サステナビリティレポート2021」(以後、報告書と略す)に記載された下記の事項について、レスポンシブル・ケア検証センターが化学業界の専門家の意見を表明することを目的としています。

- 1) パフォーマンス指標(数値)の算出・集計方法の合理性及び数値の正確性について
- 2) 数値以外の記載情報の正確性
- 3) レスポンシブル・ケア活動(以後RCと略す)及びESG活動の内容について
- 4) 報告書の特徴について

■ 検証の手順

- ・ 本社において、各サイト(事業所、工場等)から報告される数値の集計方法の合理性、及び数値以外の記載情報の正確性について調査を行いました。調査は、報告書の内容について各業務責任者及び報告書作成責任者に質問すること、並びに彼らより資料提示と説明を受けることにより行いました。
- ・ 武生工場の検証は、本社と武生工場を繋いだWeb会議で、本社に報告する数値の算出方法の合理性、数値の正確性、及び数値以外の記載情報の正確性の調査を行いました。調査は、各業務責任者及び報告書作成責任者に質問すること、証拠となる資料提示・説明を受けることにより行いました。
- ・ 数値及び記載情報の調査についてはサンプリング手法を適用しました。

■ 意見

- 1) パフォーマンス指標(数値)の算出・集計方法の合理性及び数値の正確性について
 - ・ 本社および武生工場では換算係数等を組込んだ自動集計システムを採用しています。さらに、異常値入力時の警告表示、数値の変更があったことを認識させるセルの着色化等を実施し、数値の正確性確保に工夫されており数値は正確、かつ効率的に集計されています。
- 2) 数値以外の記載情報の正確性について
 - ・ 報告書に記載された情報は正確であることを確認しました。原案段階では表現の適切性或いは表現の分かりやすさに関し若干の指摘をしましたが、現報告書では修正されており、現在修正すべき重要な事項は認められません。
- 3) RC活動及びESG活動の内容について
 - ・ 経営目標にSDGsの課題解決を掲げ、またグループのESGの基本方針を制定して、経営トップがSDGsやESGに率先して取り組んでいることを評価します。
 - ・ 気候変動や人権問題などの課題に取り組むために、各種の国際活動に積極的に参加していることを評価します。
 - ・ 新型コロナウイルス感染予防のため会議や出張が制限される中、電子情報を駆使したりリモートでの委員会、審査会などを活発に開催してグループの安全管理活動を推進していることを評価します。
 - ・ 武生工場では、体感教育を長期にわたり実施して浸透させるとともに、「原理原則教育」や「設計のガイドライン」教育等により現場安全の知識的基礎を固め、加えて管理職による遵守チェック、STOP 職場巡視によってつづさに現場の確認をして、工場を挙げて地道に安全レベルの維持、向上を図っていることを高く評価します。
 - ・ レア・アースマグネットを利用する創造的アイデアを全国の小学生、中学生、高校生、大学生が応募する福井高専のマグネットコンテストに武生工場が協賛して、将来世代の科学教育を支援していることを評価します。
- 4) 報告書の特徴について
 - ・ 「サステナブルな社会の実現に向けて」のページを新設して、製品を通じて社会課題の解決に貢献していることを発信していることを評価します。
 - ・ SDGsに貢献する多数の製品についてSDGsの目標を示すとともに貢献の内容を明示していることを評価します。

-以上-



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