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Environmental Data for Zeon Worksites and Group Companies ▶▶▶ http://www.zeon.co.jp/csr_e/report.html

Environmental Philosophy and Safety Philosophy

Philosophy and Policy for Safety and Environmental Activities

Responsible Care: A voluntary initiative by businesses that manufacture or handle chemical substances to achieve continuous improvement in health, safety, and environmental (HSE) performance across the entire life cycle of such substances—from development and manufacture, through distribution and use, and ending in final consumption or disposal—based on the principles of independent decision-making and personal responsibility. These businesses publicly commit to Responsible Care in their business policies, implement HSE-related actions, and strive to improve their HSE performance.

At Zeon, we have practiced the Responsible Care philosophy as a member of the Japan Responsible Care Council (now the Japan Chemical Industry Association Responsible Care Committee) since its inception in 1995. In 1998, we established our own Responsible Care Policy to define our conduct guidelines based on the Responsible Care philosophy.

Environmental Philosophy

Established in 2001, our Environmental Philosophy guides our efforts to deliver products with consistent quality through safe and reliable production while reducing our environmental impacts.

Environmental Philosophy (Established August 2001)

1. Environmental protection is a mission of a socially responsible organization
2. Our basic belief is that environmental protection can be achieved with innovative technology
3. Environmental protection will be achieved when all employees work together with a sense of mission to overcome challenges

Safety Philosophy

A consistently safe work environment is the foundation of all production activities. We formulated our Safety Philosophy in 1997 to guide our safety activities.

Safety Philosophy (Established March 1997)

1. Safety is the foundation of all business activities and the greatest priority
2. Our basic belief regarding safety is that we can prevent all accidents
3. Safety will be achieved by performing the 5Ss* and when everyone takes responsibility for their own actions

*5Ss:
Seiri (sort), Seiton (straighten), Seisou (scrub), Seiketsu (systematize), and Shitsuke (sustain)

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Responsible Care Policy

Responsible Care Policy (Established June 1998)

1. Prioritize the environment and safety

Protecting the environment and ensuring safety are preconditions for all business activities and are the most important priorities. We will work continuously to enact full accident prevention countermeasures, and provide education and training for all employees to prevent safety and environmental accidents.

2. Collect and distribute the latest information on chemical products

We will collect, store and manage the latest information required for the appropriate handling, use and disposal of chemical products, and distribute this information to employees and users.

3. Minimize the discharge of toxic chemicals and waste

We will work to reduce the discharge of hazardous chemical substances, minimize waste, and develop technology for recycling and reusing materials.

4. Promote activities for conserving resources and energy

We will aim to dramatically reduce the amount of energy we use and help alleviate global warming by developing innovative technology and actively promoting resource and energy conservation activities that involve all employees.

5. Take the environment and safety into account when developing new processes and products and performing quality assurance

We will perform thorough environmental and safety evaluations from the initial stages of research, develop technology and products that take the environment and safety into account, and work to maintain and improve the quality of technology and products.

6. Live together with society

We will strictly observe regulations related to the environment and safety, whether the regulations come from the local community, the national government, overseas, or organizations to which we belong. While cooperating in these activities, we will work to enhance our communication with the local community and society in order to convey a better understanding of Zeon's activities and further strengthen the trust that society has in our company.

7. Perform continuous improvements

We will continuously improve our environment safety management and technology by operating a Responsible Care Audit, the Safety Management System, an Environment Management System based on ISO 14001, and an Occupational Health and Safety Management System.

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Environmental and Safety Management

We have built Environmental and Safety Management Systems based on the Responsible Care philosophy, and our plants have obtained ISO 14001 certification. Our four main plants completed the transition to the 2015 version of ISO 14001 after the standard was revised in September 2015. Our goal is to ensure the safety of all persons at our worksites and plants.

Overview of Environmental and Safety Management Systems

President's Annual Policy and Safety Management Improvement Master Plan

These documents are created by top management.

Annual Environment and Safety Policy

The Environmental and Safety Affairs Department General Manager creates this policy after the President's Annual Policy and the Safety Management Improvement Master Plan are released. The Annual Environment and Safety Policy is reviewed by the CSR Conference and finalized by the President.

Annual Worksite Manager's Policy and Annual Worksite Safety Management Improvement Master Plan

Worksite managers create these documents after the President's Annual Policy and the Safety Management Improvement Master Plan are released.

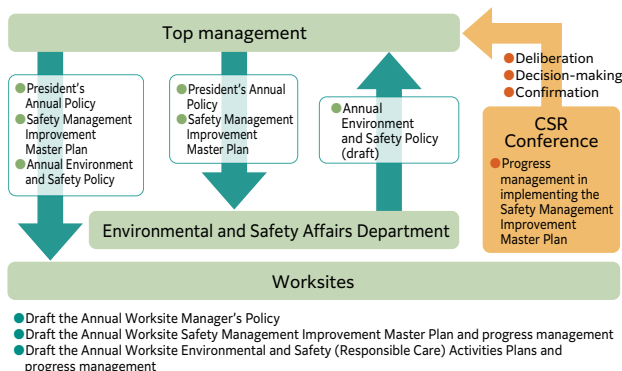
Annual Worksite Environmental and Safety (Responsible Care) Activities Plans

Worksite managers create the Activities Plans after the group-wide Annual Environment and Safety Policy is released.

• Progress Management

- **Safety Management Improvement Master Plan:** Progress verified by the CSR Conference
- **Annual Worksite Safety Management Improvement Master Plan:** Progress verified by the worksite manager during worksite inspections
- **Annual Worksite Environmental and Safety Activities Plans:** Progress verified by the worksite manager during worksite inspections

Environmental and Safety Management Systems



Audits

Audits assess whether our management systems are functioning normally.

Worksite Responsible Care audits cover environmental and safety matters and are headed by the Environmental and Safety Affairs Department General Manager. These audits have two parts: the Responsible Care Audit and the Responsible Care Dialogue.

Responsible Care Audits

- Audits using specialized indicators to monitor the progress of Responsible Care activities.
- These audits also include auditing conducted for worksites that have Certified Completion and Process Safety Inspectors for High-Pressure gas.
- The progress of improvements in areas where audits uncovered such needs is verified using the Audit Findings Improvement Plan and Progress Report.

Responsible Care Dialogues

- A venue for worksite members and management to consider, discuss, and resolve worksite environmental and safety issues that are difficult to identify through audits.

Responsible Care Audits at Group Companies

Group Company Responsible Care Audits cover Group company Responsible Care activities and are headed by the Environmental and Safety Affairs Department General Manager. The progress of improvements in areas where audits uncovered such needs is verified using the Audit Findings Improvement Plan and Progress Report.

Internal Plant Audits

Internal plant audits are conducted at plants.

- Plant manager inspections: Inspections of the progress of Responsible Care implementation conducted by the plant manager (at least once/year)
- Environmental Management System (EMS) internal audits

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Environmental and Safety Education

Systematic safety education

Environmental and safety education programs are implemented in accordance with the annual plan set by each worksite.

Group-wide environmental and safety education supervised by the Environmental & Safety Affairs Department is combined with worksite-specific environmental and safety education tailored to the specific needs of each individual worksite.

Through these educational activities, we strive to eliminate safety incidents and occupational accidents, minimize damage should an incident or accident occur, and maintain Zeon's status as an enterprise trusted by local communities.



Education using accident case studies

Manager and supervisor education

Training for newly-appointed section managers

This is implemented for newly-appointed manufacturing section managers, facilities management section managers, and environmental and safety section managers.

The content of the training includes safety activities based on Zeon's safety system, safety concerns and responsibilities that safety managers should be familiar with, environmental and safety related laws and environmental and safety related company regulations, an overview of the fundamental four laws, and the Safety Management System, etc.



Education using accident case studies

Safety education provided by former plant managers

Education using accident case studies

Held since FY 2003, this education program aims to prevent the lessons of past accidents from fading from memory, to apply these lessons in work operations, to raise workers' awareness of safety, and to increase their sensitivity to potential risks.

Former plant managers give presentations to all plant employees. They cover specific examples of accidents at Zeon and other companies to communicate the grim consequences of such accidents, and provide instruction on how to analyze risk factors as well as countermeasures to prevent recurrences.

In FY 2019, instructors provided education by introducing accident case studies from other companies and directly communicating their own views to participants, such as the lessons to be drawn from each incident, while applying the cases to work processes at Zeon.

Environmental and safety education for new employees

Newly-recruited employees at Zeon headquarters

Presentation of case studies of occupational accidents that have occurred while newly-recruited employees were undertaking factory placements, emphasizing the importance of abiding strictly by the rules that have been established in each workplace.

Newly-recruited employees at individual worksites

Education in basic matters relating to environmental and safety issues.

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Environmental and safety education and training activities organized by individual worksites

Safety and environmental legislation education

Each individual worksite implements environmental and safety education in accordance with the annual plan.

Training activities

Training is implemented in accordance with the annual plan. We strive to improve emergency response capabilities by identifying issues that arise following training implementation and using these to make systematic improvements.

- Comprehensive disaster response drills: These are held once or twice a year, and involve the implementation of disaster response training and evacuation training based on earthquake or tsunami scenarios
- Individual training: Trainings for the individual self-directed disaster response organization disaster response teams and reporting trainings are held

Establishment of the "Safety Workshop"

A "Safety Workshop" has been established at the Mizushima Plant, at which employees can acquire practical experience in the various types of safety rules. Using the "Factory Safety Rules Understanding Verification Sheet" drawn up in accordance with the "Standards Governing Usage of the Mizushima Plant Safety Workshop," activities are conducted to check employees' level of understanding of safety rules; in addition, activities are held that make use of education based on the exhibits in the Safety Workshop to deepen understanding of factory rules among factory personnel (including the personnel of partner companies).



Display in the Safety Workshop showing how to use scaffolding

Adoption of hands-on safety education

The hands-on safety education program that was launched in FY 2014 at the Kawasaki Plant was expanded in FY 2015 to include the Tokuyama Plant, the Mizushima Plant and the Takaoka Plant, providing education for research facility staff, the staff of partner companies that perform work inside Zeon facilities on a long-term basis, and the employees of neighboring Zeon Group companies.

The hands-on safety education provided in FY 2019 covered accidents in which employees are caught or trapped by machinery, electrostatic explosions and burns, shocks from residual pressure in couplers, accidents involving objects falling, and accidents involving loose or cut safety belts.

In the future, we will continue to implement this type of education systematically, including repeat education.

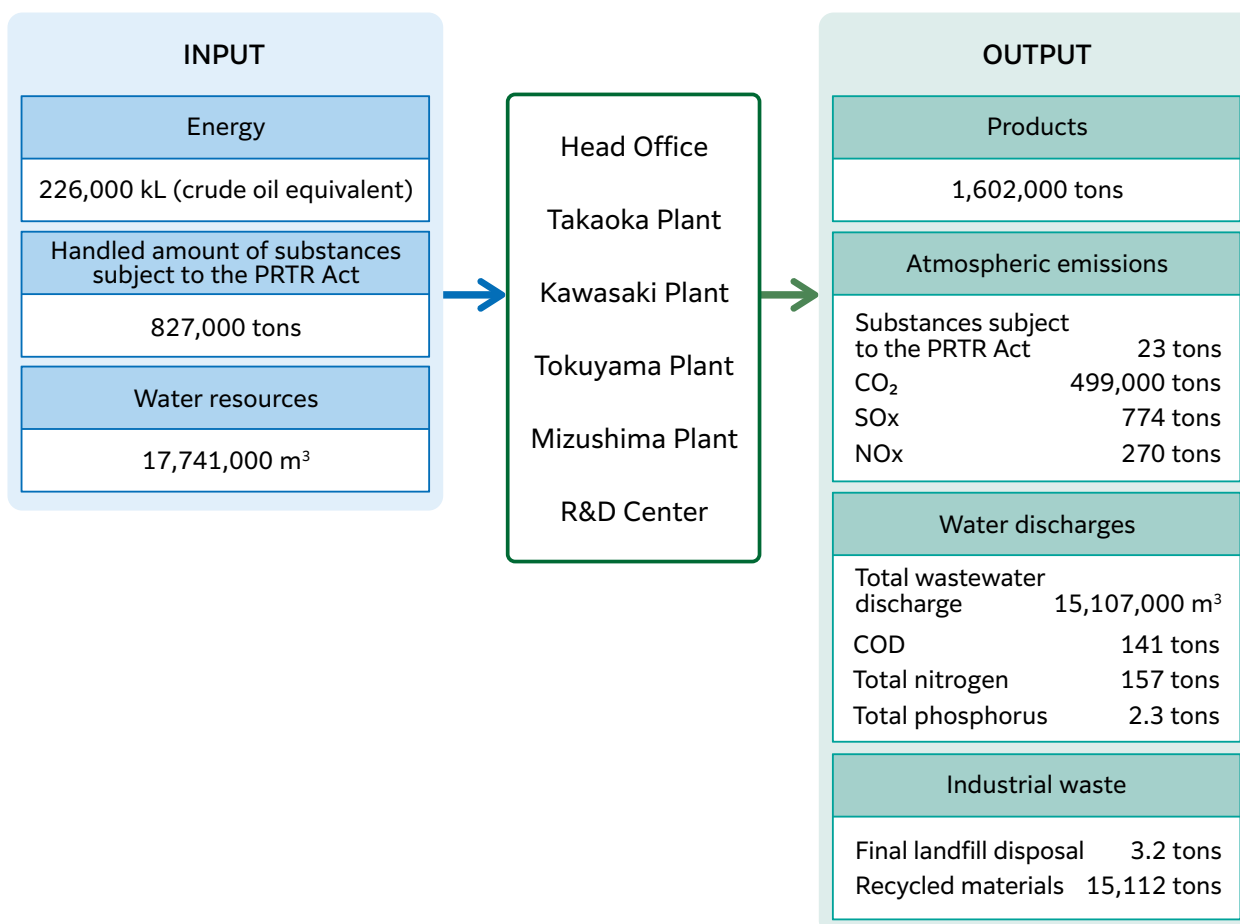


The hands-on safety education covering the dangers of getting caught in a roller

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Overview of Environmental Impacts

We procure raw materials for chemical substances, and consume energy and water resources in the production and sales of our materials and chemical substance products. While emitting substances that impact water and atmospheric environments is unavoidable in product manufacturing, we are implementing an ongoing cycle of improvements to minimize these emissions.



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Targets and Results

The targets and results of our environmental conservation initiatives as part of our Responsible Care activities are as follows.

Enterprise Blueprint for 2020 To meet the expectations of society	Details of current activities (■: Completed, △: Ongoing)	Future initiatives and targets
Further improving how society sees us by reducing our environmental impact and promoting energy conservation	<ul style="list-style-type: none"> △ Reduce emissions of hazardous substances, reduce impacts on atmospheric and water environments, and conduct PRTR activities △ Improve energy conservation in Responsible Care audits, the Safety Management System, the Environment Management System based on ISO 14001, and the Energy Conservation Implementation Committee △ Develop and launch products that contribute to reducing environmental impacts and conserving energy (including S-SBR for fuel-efficient tires, low-temperature fixing toners, cleaning solvents and etching gases with zero ozone depletion potential, and binders for lithium-ion rechargeable batteries) △ Green procurement activities (check whether substances contain banned substances and substances that are regulated by laws and regulations and the RoHS Directive, etc.) <p>FY 2019 results</p> <ul style="list-style-type: none"> ● Zero environmental incidents ● Reducing environmental impacts <ul style="list-style-type: none"> • Per-unit energy consumption: -15% over the previous fiscal year -32% compared with FY 1990 (annual average of -1.1%) • Per-unit CO₂ emissions: -1% over the previous fiscal year -42% compared with FY 1990 (annual average of -2.2%) 	<ol style="list-style-type: none"> 1. Implement activities group-wide to reduce environmental load 2. Conduct environmental management using the multiple systems noted on the left 3. Research and development that address environmental issues faced by society 4. Examine the sustainability of resource procurement including oil and water
Climate change mitigation and adaptation	<ul style="list-style-type: none"> △ Respond to the CDP and improve response to raise CDP evaluation 	<ol style="list-style-type: none"> 1. Set environmental impact reduction targets based on scenario analysis in the TCFD response, and take actions to realize the targets

There were no environmental irregularities in FY 2019.

We are taking steps to continue reducing our per-unit energy consumption and per-unit CO₂ emissions by an average of 1% per year.

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Economic Indicators of Environmental Performance (Environmental Accounting)

We began introducing environmental accounting into our operations in FY 2000 in accordance with the Guidelines for Introducing an Environmental Accounting System (Ver. 2000) published by Japan's Ministry of the Environment (MOE), and have released environmental accounting statements since the 2001 edition of the Responsible Care Activity Report. This CSR report presents key data from our environmental accounting statements in FY 2018 as recommended in the Environmental Accounting Guidelines 2005 (MOE), Environmental Accounting Guidelines for Chemical Companies (JCIA, 2003), and Environmental Conservation Cost Categories 2003 (MOE).

Scope: Zeon Corporation in Japan (Zeon Head Office, Takaoka Plant, Kawasaki Plant, Tokuyama Plant, Mizushima Plant, R&D Center);
 Period: April 1, 2019 to March 31, 2020

Environmental Conservation Costs

Environmental Conservation Expenses

We are developing technologies to minimize the environmental impact of our wastewater and reduce the amount of residual volatile substances in our products. We are focused in particular on developing technologies, designing equipment, and standardizing operating procedures to reduce emissions of butadiene and acrylonitrile, both hazardous air pollutants, and to reduce the environmental impact of our wastewater based on such parameters as total nitrogen (TN) and chemical oxygen demand (COD).

We are also working to develop eco-friendly products and innovative, energy-efficient processes.

Environmental conservation costs	FY 2019 (million JPY)	
Category	Investment amount	Expense
(1) Costs within the business area	453	2,812
Breakdown		
• Pollution prevention costs	21	1,803
• Global environmental protection costs	432	484
• Resource recycling costs	0	525
(2) Upstream and downstream costs	0	0
(3) Management costs	24	126
(4) R&D costs	21	2,100
(5) Social activities costs	0	38
(6) Environmental damage response costs	0	74
Total	499	5,150

Environmental Conservation Outcomes

Environmental Conservation Outcomes (Physical Outcomes)

Environmental impact indicators	FY 2019 results	Compared to FY 2018
SOx emissions (tons)	774	85
NOx emissions (tons)	270	-28
COD emissions (tons)	141	17
CO ₂ emissions (tons)	582,190	37,443
Industrial waste sent to landfills (tons)	3.2	3.2
Total emissions of substances subject to the PRTR Act (tons)	23.3	-0.4

Economic Effects

We strive to use oils and other byproducts from our production and manufacturing processes in economically effective ways such as converting them to fuel and recycling them, or by other means. We are also working to recycle the metal resources in empty drums and containers. To conserve energy, we recover heat generated in heat-intensive distillation processes.

Economic Effects Resulting from Environmental Conservation Measures

Effects	Unit: million JPY
Cost reductions from energy savings	0
Cost reductions from reducing emissions, recovery, and reuse of solvents and catalysts	4,661
Total	4,661

Environmental and Safety Investment

In addition to environmental investment related to facilities to prevent pollution and conserve energy and resources, we strive to improve safety through ongoing safety investment aimed at improving safety and eliminating hazards.

	Unit: million JPY
Environmental conservation	472
Safety related	3,207
Total	3,679

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Greenhouse Gas Emission Reductions and Energy Conservation

Initiatives to Reduce Greenhouse Gas (CO₂) Emissions

By FY 2020, we aim to reduce CO₂ emissions from fuels defined in Japan's Act on the Rational Use of Energy ("Energy Conservation Act") to 80% of FY 1990 CO₂ emissions levels. We added CO₂ emissions reduction outcomes to the evaluation parameters of ZΣ* in FY 2010, and are working to reduce CO₂ emissions group-wide.

In FY 2019, annual CO₂ emissions totaled approximately 499,000 tons, which achieved our target.

*ZΣ:
Initiatives to improve our corporate soundness that require the full mobilization of Zeon Group capabilities. These initiatives used to be called "ZΣ Activities," but after evolving and becoming established, they are now simply referred to as "ZΣ."

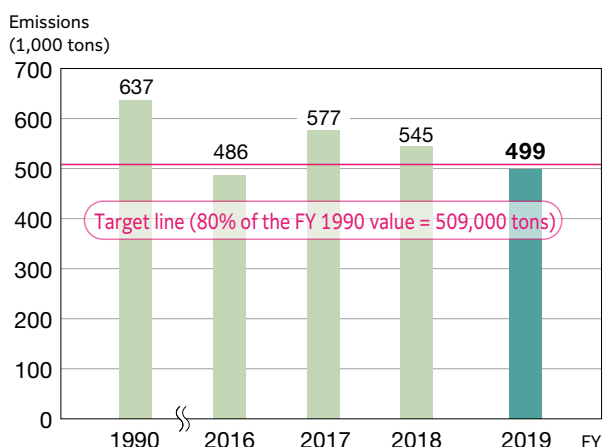
Initiatives to Conserve Energy

In FY 2019, we consumed energy equivalent to burning approximately 226,000 kiloliters of crude oil, or 68% of our FY 1990 baseline. We plan to improve our per-unit energy consumptions indicator* by an average of 1% per year going forward.

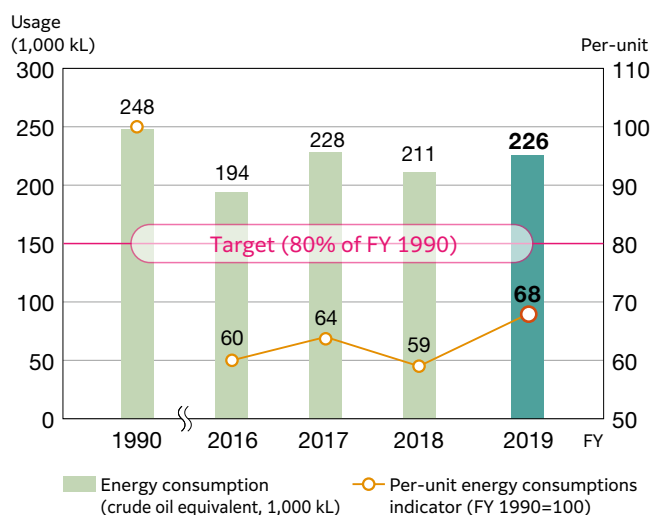
In FY 2009, we achieved the JCIA target (for FY 2008–2012) of per-unit energy consumptions indicator of 80% of the FY 1990 baseline, and have maintained this level. Since FY 2010, we have been implementing a plan to improve our average annual per-unit energy consumptions by 1% per year.

*Per-unit energy consumptions indicator:
Guideline for making energy-efficiency comparisons. Here, energy-efficiency comparisons use FY 1990 as the baseline. (FY 1990=100)

Change in CO₂ Emissions



Energy Consumption and Per-unit Consumptions Indicator



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Chemical Substances Management

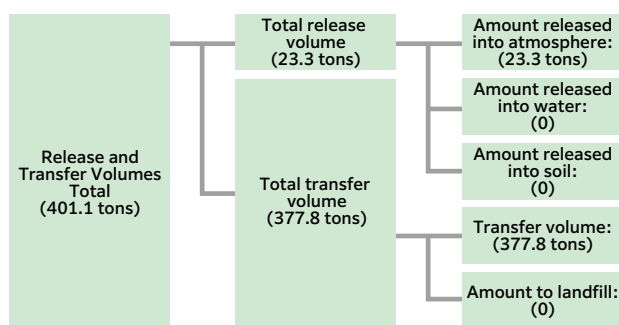
PRTR Initiatives Chemical Substances

We are implementing group-wide initiatives to reduce release and transfer of substances subject to Japan's PRTR Act.

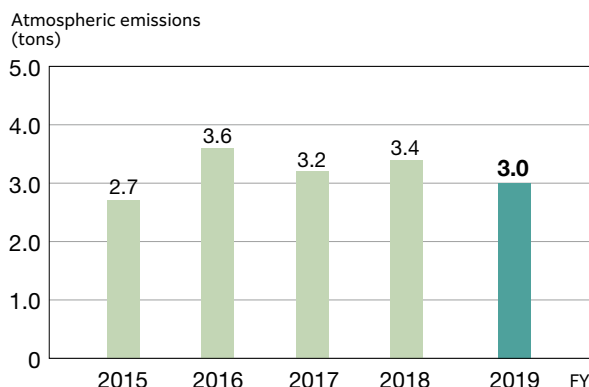
Atmospheric Emission Reductions of Hazardous

We are systematically reducing emissions of butadiene and acrylonitrile, which are among the substances requiring priority action under the Japan's Air Pollution Control Act.

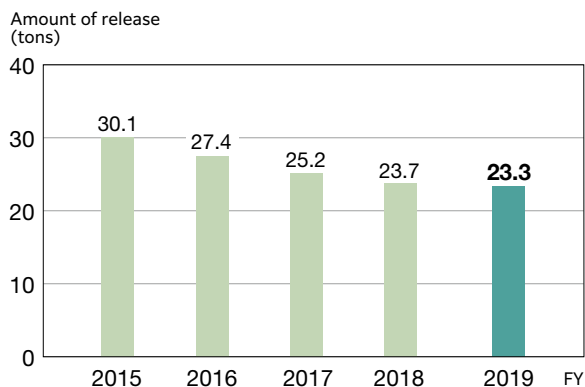
Release and Transfer Volumes of Substances Subject to the PRTR Act (FY 2019)



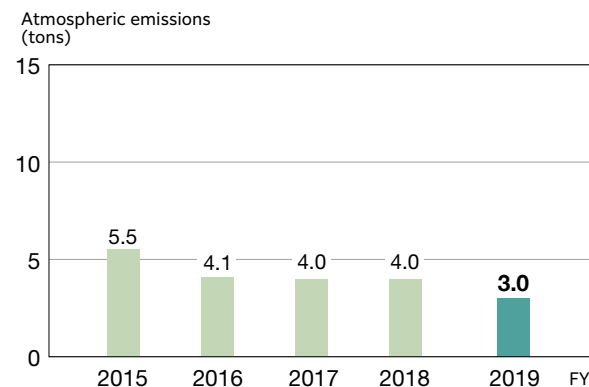
Butadiene Emissions



Release of Substances Subject to the PRTR Act



Acrylonitrile Emissions



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Detailed Release and Transfer Volumes of Substances Subject to the PRTR Act (FY 2019, 4 plants + R&D Center)

Government designated no.	Substance	Handled amount (tons)	Released into atmosphere (tons)	Released into water (tons)	Total release volume (tons)	Transfer volume (tons)
2	Acrylamide	85.8	0.0	0.0		0.0
3	Ethyl acrylate	1,398	4.0	0.0	4.0	0.0
4	Acrylic acid and its water-soluble salts	50.1	0.0	0.0		0.0
6	2-Hydroxyethyl acrylate	2.8	0.0	0.0		0.0
7	n-Butyl acrylate	3,083	1.5	0.0	1.5	16.6
8	Methyl acrylate	11.2	0.2	0.0	0.2	0.0
9	Acrylonitrile	28,775	3.0	0.0	3.0	0.2
13	Acetonitrile	1.8	0.0	0.0	0.0	1.7
20	2-Aminoethanol (monoethanolamine)	7.8	0.0	0.0		0.0
28	Allyl alcohol	0.0	0.0	0.0		0.0
29	1-Allyloxy-2,3-epoxypropane	17.6	0.0	0.0		2.5
30	n-Alkylbenzenesulfonic acid and its salts (alkyl C=10-14)	1,340	0.0	0.0		0.0
36	Isoprene	151,730	1.7	0.0	1.7	0.1
53	Ethylbenzene	44.1	0.0	0.0	0.0	0.0
56	Ethylene oxide	775	0.0	0.0		0.0
59	Ethylenediamine	0.0	0.0	0.0		0.0
60	Ethylenediamine tetraacetic acid	15.7	0.0	0.0		0.0
65	Epichlorohydrin	0.0	0.0	0.0		0.0
68	1,2-Epoxypropane	30.6	0.0	0.0		0.0
80	Xylene	2,105	0.2	0.0	0.2	1.1
102	1-Chloro-2,4-dinitrobenzene	0.1	0.0	0.0		0.0
125	Chloroform	0.3	0.0	0.0	0.0	0.3
134	Vinyl acetate	160	0.1	0.0	0.1	0.0
190	Dicyclopentadiene	121,652	0.2	0.0	0.2	0.0
202	Divinylbenzene	6.0	0.0	0.0		0.0
203	Diphenylamine	7.3	0.0	0.0		0.0
207	2,6-Di-tert-butyl-4-cresol	383	5.7	0.0	5.7	0.0
218	Dimethylamine	0.2	0.0	0.0	0.0	0.3
220	Water-soluble salts of dimethyldithiocarbamic acid	20.2	0.0	0.0		0.6
230	N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine	41.5	0.0	0.0		0.0
232	N,N-dimethylformamide	251	0.0	0.0	0.0	1.5
240	Styrene	40,367	0.8	0.0	0.8	56.5
243	Dioxins	0.0	0.0	0.0		0.0
259	Tetraethylthiuram disulfide	16.1	0.0	0.0		0.0
274	Tert-dodecanethiol	883	0.0	0.0	0.0	0.1
277	Triethylamine	24.0	0.0	0.0		0.0
296	1,2,4-Trimethylbenzene	247	0.0	0.0		0.0
297	1,3,5-Trimethylbenzene	247	0.0	0.0		0.0
300	Toluene	3,296	0.0	0.0	0.0	127.5
302	Naphthalene	311	0.0	0.0		0.0
308	Nickel	68.0	0.1	0.0	0.1	59.7
309	Nickel compounds	90.6	0.0	0.0		90.6
333	Hydrazine	0.3	0.0	0.0		0.0
338	2-Vinylpyridine	56.6	0.0	0.0	0.0	14.2
349	Phenol	92.3	0.0	0.0	0.0	0.0
351	1,3-Butadiene	462,821	3.0	0.0	3.0	0.0
355	Bis (2-ethylhexyl) phthalate	0	0.0	0.0		0.0
392	n-Hexane	332	2.1	0.0	2.1	3.1
395	Water-soluble salts of peroxodisulfuric acid	136	0.0	0.0		0.0
400	Benzene	3,249	0.0	0.0		0.0
407	Polyoxyethylene alkyl ether	76.0	0.0	0.0		0.0
408	Polyoxyethylene octylphenyl ether	4.4	0.0	0.0		0.0
410	Polyoxyethylene nonylphenyl ether	22.3	0.0	0.0		0.0
411	Formaldehyde	0.0	0.0	0.0		0.0
414	Maleic anhydride	80.4	0.5	0.0	0.5	0.0
415	Methacrylic acid	2,154	0.0	0.0	0.0	0.0
417	2,3-Epoxypropyl methacrylate	4.8	0.0	0.0		0.0
420	Methyl methacrylate	323	0.0	0.0	0.0	1.3
436	α-Methylstyrene	215	0.0	0.0		0.0

The PRTR Act specifies amounts in kilograms to two significant figures; however, this report specifies amounts in tons. 0.0 indicates less than 0.005 tons. Dioxins are expressed in units of mg-TEQ.

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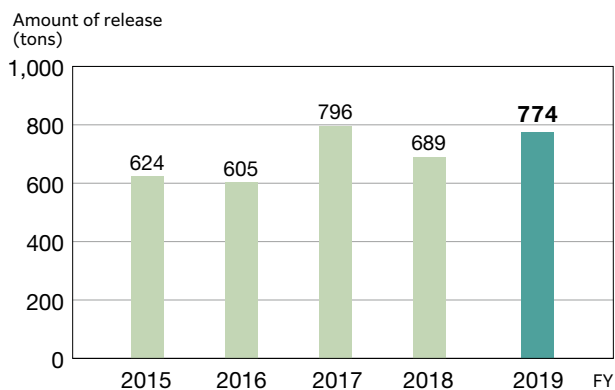
Air, Water, and Waste Materials

Initiatives to Prevent Air and Water Pollution

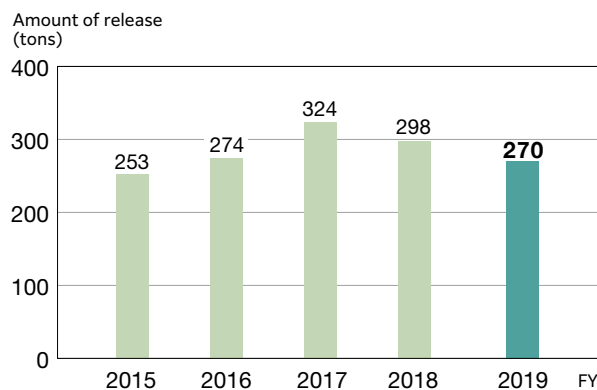
We are working to reduce emissions of air pollutants through the adoption of heavy oil with low sulfur (S) content and conversion to liquid natural gas (LNG).

The quality of our plant wastewater complies with the standards of the Water Pollution Prevention Act and agreements with local authorities (voluntary management standards).

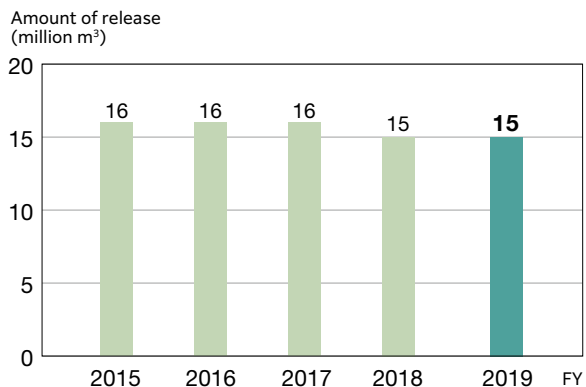
SOx Emissions



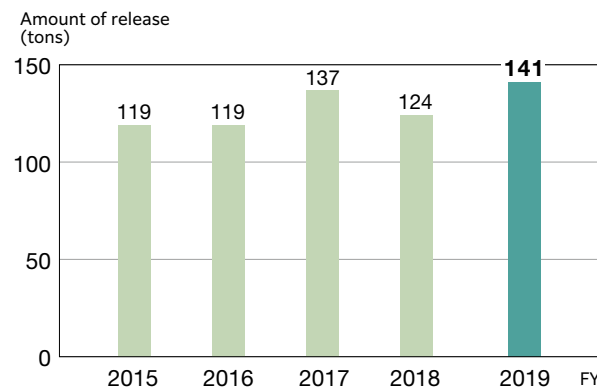
NOx Emissions



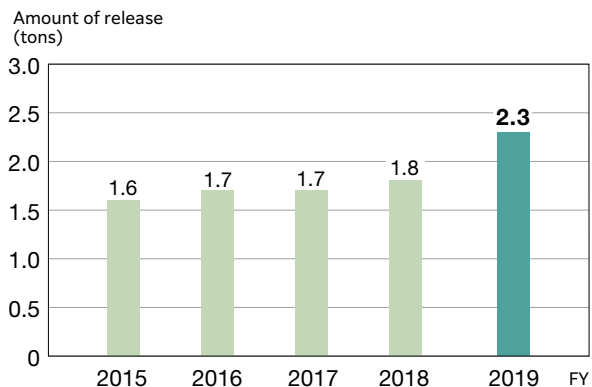
Total Wastewater Discharge



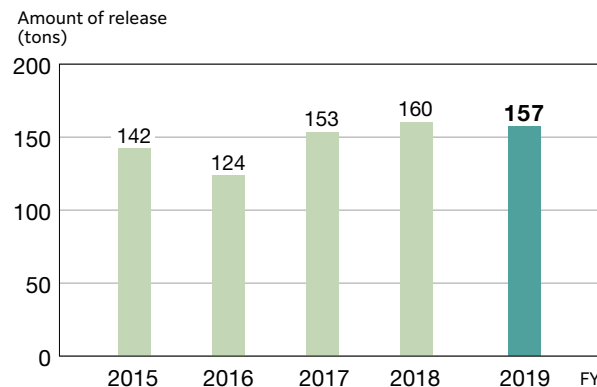
COD Discharge



Total Phosphorus Discharge



Total Nitrogen Discharge



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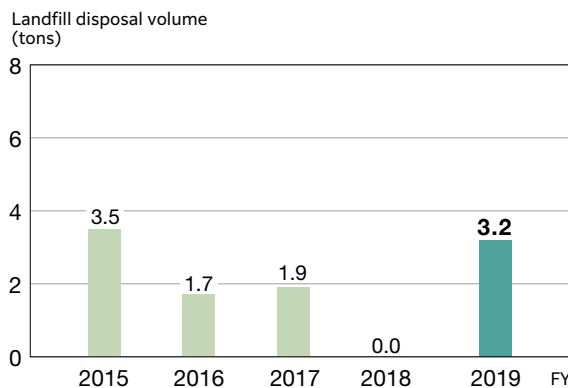
Waste Reductions

In terms of reducing the amount of industrial waste destined for final landfill disposal, Zeon Corporation worksites are maintaining a record of zero emissions (less than 0.1% of the industrial waste generated in FY 2007) since achieving this target in FY 2011.

Zeon Group companies had a final landfill volume of more than 600 tons in FY 2007, but since FY 2012 this has been reduced to around 10 tons, or roughly 0.4% of the industrial waste generated in FY 2007. This is considered zero emissions.

We aim to maintain a final landfill volume of 5 tons or less, the same as at Zeon Corporation worksites.

Final Industrial Waste Disposal at External Landfills



Chemical Product Safety Information

We collect and provide safety information on our chemical products. We also conduct hazard assessments. For quality assurance, see Consumer Issues (→P. 55).

Information for the Proper Handling of Chemical Products

We produce Safety Data Sheets (SDS) for all Zeon products. SDS provide information including GHS*1 classification results, product hazards, and cautions for handling, etc.

For some of our products, we disclose safety-related information in the form of safety abstracts, which are released on the GPS/JIPS*2 website (ICCA GPS Chemicals Portal Site).

*1 GHS
Globally Harmonized System of Classification and Labelling of Chemicals

*2 GPS/JIPS
Global Product Strategy / Japan Initiative of Product Stewardship. GPS is a new voluntary initiative related to the management of chemicals, promoted by the International Council of Chemical Associations (ICCA). In Japan, the Japan Chemical Industry Association (JCIA) promotes GPS under the IPS and encourages member companies to participate.

Participation in Voluntary Chemical Industry Initiatives

Zeon provides financial support for research activities by the LRI*3 involving chemical substance hazard reviews, safety evaluations, and environmental impact surveys. As a member of the Far East Section of the IISRP*4, Zeon also participates in investigations of environmental issues, reviews of countermeasures, and activities to implement them.

*3 LRI
Long-range Research Initiative: Activities to provide long-term support for research on the impact of chemical substances on health and the environment. A program under the auspices of the International Council of Chemical Associations (ICCA) that is carried out with funding from LRI member companies and in cooperation with the chemical industries of Japan, the United States and Europe (specifically, the Japan Chemical Industry Association, American Chemistry Council and European Chemical Industry Council).

*4 IISRP
International Institute of Synthetic Rubber Producers

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Environmental Protection and Safety in Logistics

To more effectively use and recycle resources, we are promoting recovery and recycling of wood, resin, and metal pallets and containers used to transport various goods. We also use a large number of recycled resin transportation pallets.

Zeon has for some time now been working to promote the effective utilization of resources and implementing measures to reduce the environmental footprint of logistics operations, for example by reducing the weight of metal box pallets (by approximately 7%) and promoting the recovery of metal box pallets from overseas, as well as implementing flexible bag recovery and reuse.



Lightweight metal box pallet



Folded pallets after use

Compliance with the revised Energy Conservation Act

As a specified consigner under the revised Energy Conservation Act, we are working to rationalize the use of energy together with partner companies involved in product and raw materials transportation. To date, we have studied and implemented improvements in loading efficiency, modal shift to rail and ship transportation, and truck and ship fuel efficiency.

Safety Initiatives in Logistics

At Zeon, we established Yellow Card Management Rules for transporting hazardous products. These rules require drivers to carry a Yellow Card* when transporting such products.

We also conduct reporting and communication training for drivers, and each plant offers training on product handling to prevent accidents in logistics.

*Yellow Card
Document describing what to do if an accident occurs during transportation, as established by the Logistics Safety Management Policy of the Japan Chemical Industry Association. The document is called a Yellow Card because it is printed on yellow paper.