

## Environmental vision

INOAC respects the natural environment of our irreplaceable earth and contributes to realizing an affluent society that is comfortable to live in through technology harmonized with our environment and environment-friendly corporate activities.

## Environmental policy

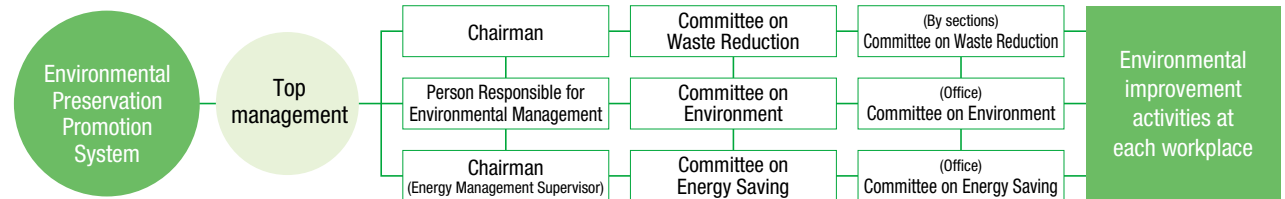
- ① We comply with environment-related laws and regulations and other requirements, and implement business activities that society can trust.
- ② We promote reducing CO<sub>2</sub> emissions such as by saving energy to prevent global warming.
- ③ We work on resource conservation, waste reduction and recycling to contribute to a recycling-oriented society.
- ④ We appropriately manage chemicals that may influence the environment and reduce the risk to preserve our environment.
- ⑤ We actively develop products with less environmental impacts, contributing to the conservation of nature throughout the lifecycles of the products.
- ⑥ We promote environmental management, educate employees about the environment, implement environmental audits and continue to improve.
- ⑦ We contribute to establishing a sustainable society through local environmental preservation work as good corporate citizens.



## Environmental management system

In order to promote environmental activities in an organized fashion, the Person Responsible for Environmental Management implements the integrated management of the environment under the direct control of top management. In addition, the whole company also engages in environmental activities under the direction of the Committee on Environment. We organized specific section committees to handle industrial waste and energy saving to further improve the two areas and to promote environmental management in cooperation with each committee. Furthermore, we are managing our objectives so that the activities conforming to ISO 14001:2015 that began in 2017 are more closely integrated with our main business and will hopefully take deeper root in the company.

■ Environmental Preservation Promotion System



## Internal environmental audits

We implement internal environmental audits to check the operational state of our environmental management. The audit team consists of two to three employees who have completed the auditor training prescribed by the company, and checks if the environmental management system is appropriately operated, maintained and improved. Within these activities are also some interactions with auditors from neighboring sites and efforts to improve the quality of the audits themselves that are conducted to reinforce on-site checks.








## External environmental examination

We ask the Japan Quality Assurance Organization (JQA), which is an external certification registration body, to implement examinations to check if the environmental management system is appropriately operating in accordance with ISO 14001:2015.

In FY 2018, the audit expanded to include Higashi Nihon INOAC Co., Ltd. No areas were found to be in need of improvement as a result, and the auditors determined that the system is being maintained. As a general opinion, they suggested taking on the challenge of turning risks and opportunities into goals that conform to the work of each individual department.

## Summarization of major activities in FY 2018

The results of INOAC's main work for the environment in FY 2018 are shown in the table below. In terms of reducing CO<sub>2</sub> emissions that result from energy use, the Committee on Energy Saving continued to take the lead in various initiatives, which enabled us to reach our objectives. In terms of reducing waste disposal, we moved forward on recycling and reducing waste output, such as by carrying out measures against defects. However, we were unable to reach our objectives because the market standards for valued resources have become stricter year after year. In terms of reducing the emission of substances subject to the Pollutant Release and Transfer Register (PRTR) system, we were unable to reach our objective by a small margin. This was because the effects of the various measures we undertook last year reached a point of leveling out, and also because we transferred and closed several facilities, which resulted in the disposal of waste substances.

Items to be worked on	Policy and objectives of activities in FY 2018		Activity results in FY 2018	Results
Reduction of energy consumption	Factory-related site	Intensity (CO <sub>2</sub> emission/production sum) 0.684 or less [CO <sub>2</sub> emission 61,095 t-CO <sub>2</sub> (2017 result)]	Intensity 0.644 [CO <sub>2</sub> emission 59,563 t-CO <sub>2</sub> (2018 result)]	
	Office-related site	CO <sub>2</sub> emission 178,383 kg-CO <sub>2</sub> or less	CO <sub>2</sub> emission 173,753 kg-CO <sub>2</sub>	
Reduction in waste	Factory-related site	Intensity (treated amount/production sum) 0.0637 or less [Treated amount 5,684 t (2017 result)]	Intensity 0.0731 [Treated amount 6,766 t (2018 result)]	
	Office-related site	Treated amount 1,524 kg or less	Treated amount 1,133 kg	
PRTR substances Reduction in release and transfer amounts	Intensity ((release amount + transfer amount)/production sum) 1.96 or less [Release amount + transfer amount 175,450 kg (2017 result)]	Intensity 2.04 [Release amount + transfer amount 188,693 kg (2018 result)]		
Environmental improvement work	Environmental improvement cases (total in the entire company) 1,250 cases or more	1,561 cases		
Environmental communication	Issue CSR report	Issued		

\* Business places from which environment data are collected to summarize major activities are shown below.

 Objectives reached  Objectives not reached

**INOAC CORPORATION** Anjo Plant, Sakurai Plant, Nanno Plant, Yana Plant, Ishimaki Plant, Ikeda Plant, Ikeda Second Plant, Ono Plant, Jinno Plant, Ukiha Plant, Headquarters (Nagoya / Tokyo), Osaka branch

**INOAC Housing & Construction Materials Co., Ltd.** Ibigawa Plant, Kofu Plant **Kyushu INOAC Co., Ltd.** Kikuchi Plant, Ukiha Plant, Kita-Kyushu Plant

**Techno Foam Japan Co., Ltd.** Headquarters, Saitama Plant **Kyushu Color Foam Co., Ltd.** **Higashi Nihon INOAC Co., Ltd.**

\* Higashi Nihon INOAC Co., Ltd. was added to the data collection range.

\* The measurement for managing the objectives of energy use was changed from the used amount of crude oil equivalent to CO<sub>2</sub> emissions.

\* The measurement unit for managing the objectives of waste treatment was changed.

## Compliance with environmental laws and regulations

At INOAC, we identify environmental laws and regulations that are relevant to our business activities and manage them on a daily basis. As part of the Environmental Management System, we prevent environmental pollution and otherwise conduct environmental risk management to ensure that we properly comply with laws and regulations related to noise and industrial waste treatment, through monitoring, measurement, and assessment at each plant. We will continue strictly adhering to environmental preservation agreements with local government in line with corporate ethics, including environmental laws and regulations.

### ■ Main environment-related laws and regulations in our business

- Air** Air Pollution Control Act, Automobile NOx PM Law, Act on Special Measures against Dioxins
- Water quality and soil** Water Pollution Prevention Act, Purification Tank Act, Sewerage Act, Soil Contamination Countermeasures Act
- Noise, vibration and malodor** Noise Regulation Act, Vibration Regulation Act, Offensive Odor Control Act
- Chemical substances** Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof, Poisonous and Deleterious Substances Control Act
- Resource conservation and recycling** Act on the Rational Use of Energy, Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging, Act on Rational Use and Appropriate Management of Fluorocarbons, Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes, Waste Management and Public Cleansing Act
- Disaster prevention** Fire Service Act, High Pressure Gas Safety Act
- General and others** Factory Location Act, Act on Improvement of Pollution Prevention Systems in Specified Factories, Radio Act

\*Local government ordinances are omitted.

## Training for emergencies

We identify accidents and emergencies in accordance with the characteristics of each business facility, and periodically implement training to prevent environmental pollution such as fires and chemical leakage (oils, solvents, etc.) from facilities. General disaster training was held at the Anjo Plant on May 29 and November 8, 2018, and individual training is implemented in accordance with the characteristics of each department, including training for preventing raw materials from flowing out and evacuation drills at night. In other facilities, trainings for emergencies are implemented as preparation.



Anjo Plant: Fire-fighting team spraying water



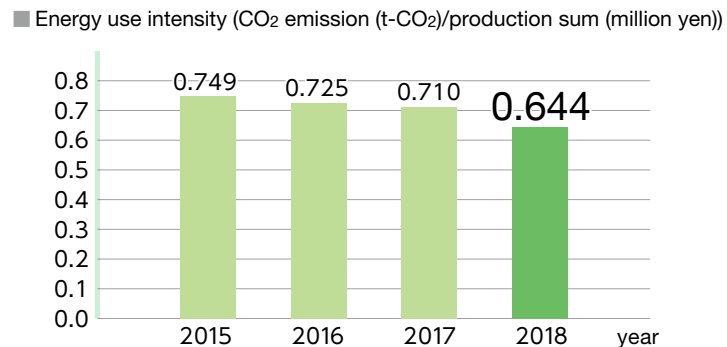
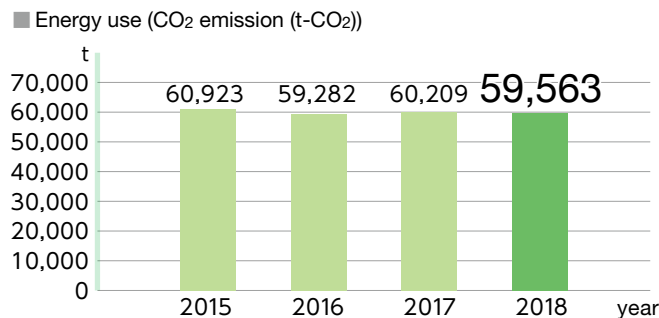
Sakurai Plant: Training in early fire extinguishment



Nanno Plant: Measures against raw material leakage

## Reduction of energy consumption

To help to prevent global warming, we have been engaged in efforts to reduce CO<sub>2</sub> emissions by promoting energy saving. Specifically, we have been promoting the following activities: reducing electricity use by equipping cooling towers with inverters and placing shade films on windows; reducing the use of heavy oil for controlling die temperatures by applying a thermal insulation coating material to the die and preventing heat release; and taking measures to insulate boiler room tanks and factory roofs. In 2018, CO<sub>2</sub> emissions resulting from energy use decreased a little—approximately 9% in terms of intensity—compared to 2017.



[ Efforts ]

### Key efforts to promote energy saving in 2018

Installing a low temperature drying room that uses waste heat to reduce the amount of energy used for drying

Reducing the use of heavy oil for controlling die temperatures by applying a thermal insulation coating material to the die and preventing heat release

Measures to prevent air leakages by using ultrasonic air leakage detectors

Insulating factory roofs using the cover construction method

Reducing electricity use by equipping cooling towers with inverters

Reducing the use of air conditioning electricity by lining windows with INOAC's CELL SHADE

Covering boiler room tanks with a thermal insulation jacket

Managing LED illuminance with a control switch



Applying CELL SHADE to windows



Tank covered with a thermal insulation jacket



Die thermal insulation coating material

### Other work for preventing global warming

INOAC is working on preventing global warming from other perspectives too. During the summer, we hold a summer eco-style campaign to educate our employees on how to save energy, such as by promoting cool biz, our energy saving attire campaign. We also work on cooperative transportation and smooth deliveries, a modal shift to railway and maritime

transport, and consolidation of distribution bases. In addition, we participate in the CO<sub>2</sub> Reduction and Lights Off Campaign propelled by the Ministry of the Environment every year. In FY 2018, we implemented the campaign at 10 facilities, including those of our group companies, on June 21 (summer solstice) and July 7 (Star Festival).

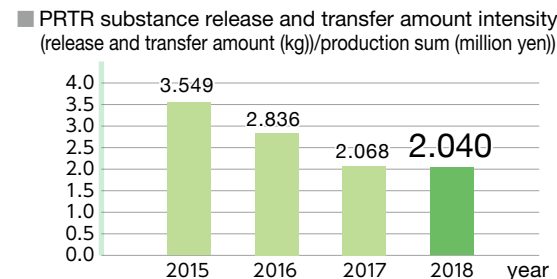
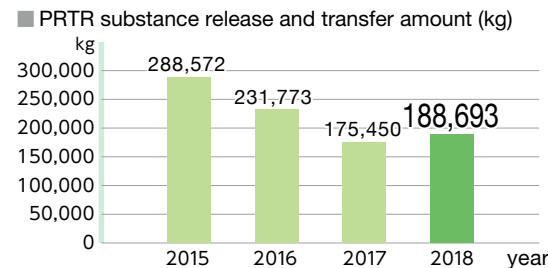
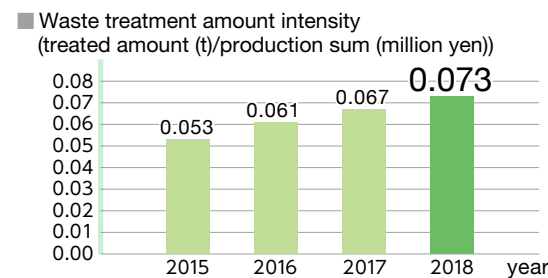
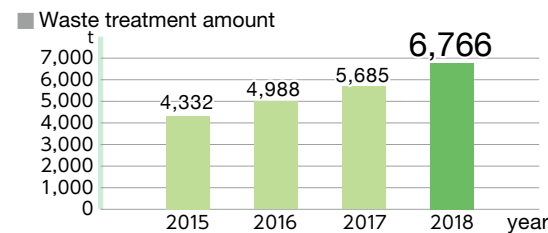
## Activities to reduce waste

All Committees on Waste Reduction throughout our company take the lead in promoting waste reduction activities. These include cutting back on losses by reducing defects and improving yield; expanding on the use of recycled materials, such as by separating and recycling used paper; and promoting the sales of recycle mats produced by using material remnants (see article on the right for more details). However, the market criteria for buying valued resources are becoming stricter every year, which gives us no other choice but to dispose of resources as industrial waste in many cases.

## Activities to reduce the use of environmentally hazardous substances

INOAC uses PRTR substances, such as tolylene diisocyanate (a raw material for polyurethane foam) as well as xylene and toluene (used in coating processes). We are making efforts to cut back on the amount of these substances we use, release and transfer, such as by promoting the use of an alternative to 1-bromopropane, which was continued to be used as a cleaning agent. However, increases in production and the demolition of old facilities resulted in having to dispose of waste substances, raising the amount released and transferred by approximately 8%. Output intensity remained mostly level.

\* We completed a total switch-over from 1-bromopropane in May 2019.

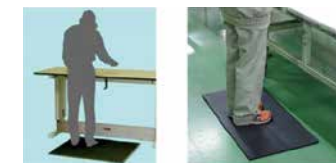


## Development and sales promotion of the recycle mat “Pellemat”

Pellemat is the name of a product we sell that is made using the material remnants of rubber sponges produced at our company. They are first crushed into chips and then hardened into sheets. Since rubber sponges have an airy layer, the mat is lightweight and demonstrates excellent thermal insulation in addition to reasonable cushioning. Furthermore, the surface is not slippery, which makes it the perfect work mat for factory floors to alleviate foot fatigue while working. In this way, we are contributing to waste reduction by utilizing what used to be unneeded material remnants that would have otherwise been disposed of in landfills as industrial waste.



Rubber sponge skins (unneeded material remnants)    Chips (after being crushed)    Product (after being formed)



Examples of use: work mat (to reduce foot fatigue for standing work)



ペレマットP-500 ×200写真    一般ゴムマット ×200写真

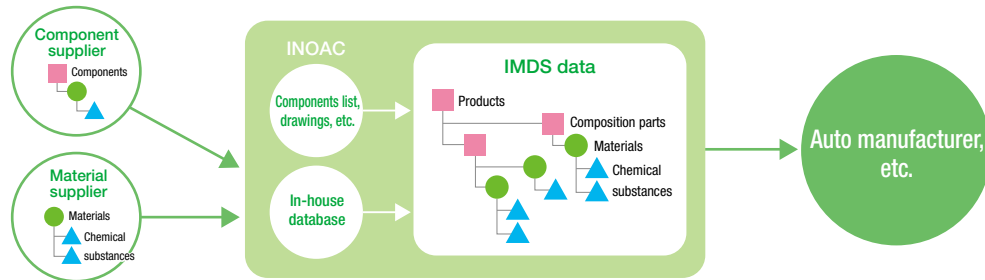
Business places from which environment data are collected on pages 17 and 18 are shown below.

◎INOAC CORPORATION/Anjo Plant, Sakurai Plant, Nanno Plant, Yana Plant, Ishimaki Plant, Ikeda Plant, Ikeda Second Plant, Ono Plant, Jinno Plant, Ukiha Plant, Headquarters (Nagoya/Tokyo), Osaka branch  
 ◎INOAC Housing & Construction Materials Co., Ltd./Ibigawa Plant, Kofu Plant    ◎Kyushu INOAC Co., Ltd./Kikuchi Plant, Ukiha Plant, Kita-Kyushu Plant    ◎Techno Foam Japan Co., Ltd./Headquarters, Saitama Plant  
 ◎Kyushu Color Foam Co., Ltd.    ◎Higashi Nihon INOAC Co., Ltd.

## Promoting IMDS, chemSHERPA and more

INOAC registers information on chemicals and reports it to our customers through IMDS\*<sup>1</sup>, especially in the automotive field, which is our main strength. We have a management system to obtain the necessary information via our supply chain and to register the information into IMDS.

■ Information collection through IMDS in INOAC – reporting process and chemical management system



We are also prepared to collect information and report to our customers using the chemSHERPA\*<sup>2</sup> format, which is widely used in the industrial world, especially the electrical machinery industry. (The format was changed from the previously used JAMP format to the above).

\*<sup>1</sup> IMDS (International Material Data System): A database for transmitting and obtaining information on materials and chemicals over the internet for the automotive industry, which was originally developed to comply with the EU ELV Directive.

\*<sup>2</sup> chemSHERPA: A unified format to transmit information on chemicals contained in products in the supply chain, which the Ministry of Economy, Trade and Industry took the initiative in developing.

## Establishment of in-house database

The Automotive Division operates the in-house database through which information on chemical substances contained in purchased parts and raw materials is managed in an integrated manner. By updating this database and being able to flexibly adapt to changes to legal regulations, we strive to improve quality, work efficiency and the reporting accuracy of information we register in IMDS and when examining the chemical substances contained in our products.

## Establishment and execution of green procurement criteria

In addition to listing chemical substances regulated by laws and regulations as well as our customers, we also create a list of chemical substances that we should reduce after understanding their content. We show the lists as green procurement criteria to suppliers and use them to obtain information on chemical substances contained in raw materials to be purchased.

## Communication about chemical substance management

The Global Quality Assurance Division is a company-wide organization and leader regarding environmental management. It brings together the chemical management sections in each department once every two months for a meeting. They review the green procurement criteria, check the management system, establish or change operation rules, and exchange opinions concerning the latest trends in chemical regulations, such as the REACH regulation and RoHS Directive. They also periodically audit the management system in each department to maintain and improve an appropriate and reliable management system.

