
Tungaloy Environmental Report 2020



Tungaloy Corporation

Message

In 2019, our Kyushu Campus was shut down due to the Northern Kyushu Torrential Rain in August and many of our employees and their families were affected by Typhoon No. 19 in October. Nine years have passed since the Great East Japan Earthquake by which Tungaloy, mainly the Iwaki Headquarters, was affected. During those years, we have been moving forward to recover from the earthquake and increase and expand production. In the course of our recovery, we launched a Business Continuity Plan (BCP) to develop an employees' safety confirmation system and save for emergency. The flood disasters in 2019 reminded us of the importance of preparation. Earthquakes, torrential rains, landslide disasters, eruptions and extremely hot summer have been becoming common in Japan, and cold waves and floods somewhere in the world. At present, a novel coronavirus COVID-19 which is a threat different from that caused by natural disasters is prevalent all over the world. I hope everyone affected and damaged by such disasters can recover calm days as soon as possible. It is difficult to eliminate damages in some aspects but Tungaloy will move forward, believing that a duty of us who live in this present world is to make preparations and take actions to advance in the right direction even little by little without giving up.

One of the biggest environment news in 2019 was the massive fire in Australia. Though the end of the fire was declared in March 2020, it has been reported that more than a billion lives of wild animals were lost during 240 days of the fire. It has been said that the fire was caused by a record drought and fierce heat and thus the effect of global warming has been pointed out as the cause. With regard to global warming, I have an impression that interest in it has been increasing more than other years probably because of the impacts of disasters due to abnormal weather in each region,

and such interest led to, for example, movement to introduce a carbon tax in Europe, a ban on the sale of hybrid vehicles in UK from 2035, and the spread of Net Zero Emissions (a goal of reducing carbon dioxide emissions substantially to zero). Furthermore, I have seen many introduction examples of SDGs aiming at a sustainable world including measures against global warming. The situation of Tungaloy's environmental efforts will be described in this report. Particularly with regard to measures against global warming, we take them as a global demand and position them as priority issues even though it is not easy to achieve the goal.

Tungaloy acquired ISO 14001, the international standards on environmental management system, in 1997, being the first manufacturer to acquire it in the cemented carbide tool industry in Japan, and this year marks the 23rd anniversary of the acquisition. As a company existing on this planet and playing a part in the manufacturing industry, in order for always being Tungaloy brand which can respond to customer's expectations and safety, all the employees will unite to continue and promote our environmental conservation activities.

This report outlines the environmental conservation activities carried out in 2019. Your kind understanding and honest opinion would be very much appreciated.

April, 2020

Tungaloy Corporation
President & CEO

Satoshi Kinoshita



Tungaloy's Policy (Quality / Environment)

Tungaloy is an international company that contributes to the development of industry, local communities and society by producing cemented carbide tools as well as by providing technical service based on excellent material technology.

Tungaloy contributes to customers and society via ideas that alter the common sense of the manufacturing industry and through the strength of its products.

Tungaloy aims to enhance corporate value through sustainable growth, based on the principle of compliance and consideration for the environment.

Tungaloy regards the workplace as a place for personal growth and each employee strives for self-sustaining growth with pride and responsibility.

- ◆ Tungaloy will fully stand behind its commitments in the communication between Tungaloy and customers.
- ◆ Tungaloy is committed to continually improve the effectiveness of both the quality control system and the environmental control system according to AS9100, ISO 9001 and ISO 14001, while upholding all applicable international standards, laws, regulations and agreements.
- ◆ Tungaloy views product quality and environmental protection as important as ensuring the company's success and profit.
- ◆ Tungaloy will convey the policy to the employees and to the relevant factors.

- ◆ Tungaloy will convey this policy to all of its employees, including its stakeholders.
- ◆ Tungaloy will address the following items in order for the policy to come into fruition:
 - Execution of requisite education and provision of qualifications as required, in order to meet product quality standards and environmental standards.
 - Supervising inspection, production and control methodologies at each and every stage of the processes in order to continue improvement.
 - Not only improving business activities that have a significant impact on the environment in every way possible, but also preventing accidents and contamination from occurring for a new change in order to enhance environmental performance.
 - Promote Reduce, Reuse, and Recycle in order to build a recycling-oriented society in addition to working on energy and resource conservation for sustainable resource utilization and continue zero-emissions.
 - As much as possible, adopt alternative technologies and switch to alternative materials that place a burden on the environment. Regarding substances that have no alternatives, thorough operational management of them is to be conducted.
 - Each employee strongly recognizes their responsibility with regards to the quality of the processes / products they are in charge of and the accountability as a corporation to conserve the environment on a global scale.
 - Tungaloy's management will provide the necessary human resources and equipment and will make them available.
 - Tungaloy's management shall set objectives, monitor achievement and periodically audit and evaluate quality management and environmental management with measurable criteria.

Approaches to SDGs

This report introduces the state of Tungaloy's approaches to Sustainable Development Goals (SDGs) which have achieved global consensus toward 2030, using icons.



Introduction of Environment-conscious Products

Tungaloy develops and releases many new products every year. We implement evaluation based on the industry standard, "the Japan Cutting & Wear-resistant Tool Association Standard for Environment-Conscious Products" for all of our products and we well the products that comply with the standard.



Small-diameter high feed milling cutter

TUNG FORCE FEED
TUNGALOY



Low-resistance insert with thick corner and large-sized insert fastening screws that can withstand highly-efficient machining have been set. Positive inclination angle has improved chip treatment, which enables use in a wider application range as compared with conventional products.

<https://www.tungaloy.com/jp/product/tungforce-feed/>

Coating grade for steel turning

T9200 SERIES
TUNGALOY



Al₂O₃ layer with excellent heat resistance has been highly homogeneous structured and thickened by changing the material of the outer coating layer to high hardness ceramics. Furthermore, evolution of coating treatment technology to reduce defects in alloy base materials and to restrain progress of cracks gives this product excellent wear and fracture resistance.

<https://www.tungaloy.com/jp/product/iso-turning/>

Face milling cutter for ultimate clearance

DO QUAD MILL
TUNGALOY



Face milling cutter designed to avoid tool interference. Even though the negative insert with double-sided specification is thick and has a strong cutting edge, it has low cutting resistance equivalent to a positive insert, which enables use in workpieces with thin wall/base or when the fixture is weak.

<https://www.tungaloy.com/jp/product/doquad-mill/>

10-cornered tool for medium to heavy turning

TURN TEN FEED
TUNGALOY



Economical with 10-cornered insert. Furthermore, adopting dovetail clamping for insert clamping has enabled stable highly-efficient machining. HD type holder with maximum 7-mm depth of cut and HF type holder with maximum 2-mm/rev feed are available, which enables use in a wider range of applications.

<https://www.tungaloy.com/jp/product/turnten-feed/>

Highly-efficient milling cutter for finishing aluminum

TUNG SPEED MILL
TUNGALOY



Extremely high number of PCD cutting edges (max. 22 inserts) allow high-speed machining with Vc = 3,000 m/min or higher. Innovative insert axial adjusting mechanism, "CamAdjust system," which enables mounting and adjusting the inserts from using the same key wrench operated in a single direction and significantly reducing insert setting time.

<https://www.tungaloy.com/jp/product/tungspeed-mill-tpyd-epyd/>

CBN insert with innovative brazing technology

T-CBN SERIES
TUNGALOY
WavyJoint



The brazing strength has been improved with the change of CBN brazing shape and the volume increase of CBN that has high thermal conductivity. Even in dry cutting, flaking on the CBN tip is unlikely to occur, and sudden fracture is prevented. The depth of cut can be increased by 1.6 times compared to the conventional product.

<https://www.tungaloy.com/product/t-cbn-series/>

Environmental Conservation Activities by Tungaloy



Global Warming Prevention / Energy Conservation Activities



We aim to prevent the global warming by reducing CO₂ emissions through energy-saving activity. Energy used by Tungaloy consists of electricity (about 90%), kerosene (about 10%).

CO₂ emission

Compared with 2018, it decreased about 6%.



Use of natural energy

We introduced a solar power generation system in 2015 and, furthermore, installed a wind generator system in 2017 to raise environmental awareness of our employees.

Our solar power generation system produces approx. 170 MWh of electricity per year, and all the electricity is used at our Iwaki Campus.



Management of chlorofluorocarbons

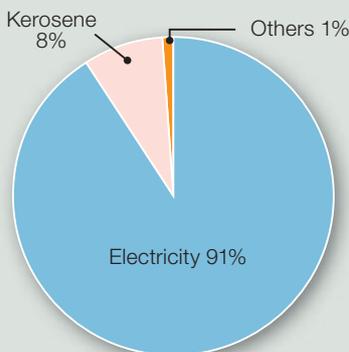
Tungaloy surely manages and inspects products using various refrigerants according to laws and regulations. Furthermore, we have started to adopt green refrigerants with low ozone depletion potential and global warming potential, using "Equipment Assessment" conducted when equipment is introduced.

Improvement in production efficiency

Each of our plants and production lines has been making efforts to reduce environmental burdens such as use of electricity and emission of CO₂ through improvement in production efficiency.

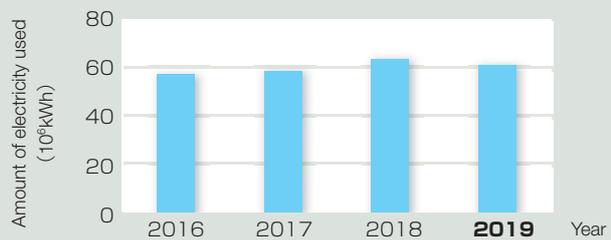
Ratio of energy used

When energy used is compared by the type by converting the amount into crude oil, electricity accounts for approximately 90%.



Amount of electricity used

Compared with 2018, it decreased about 3%.



Amount of kerosene used

Compared with 2018, it increased about 9%.



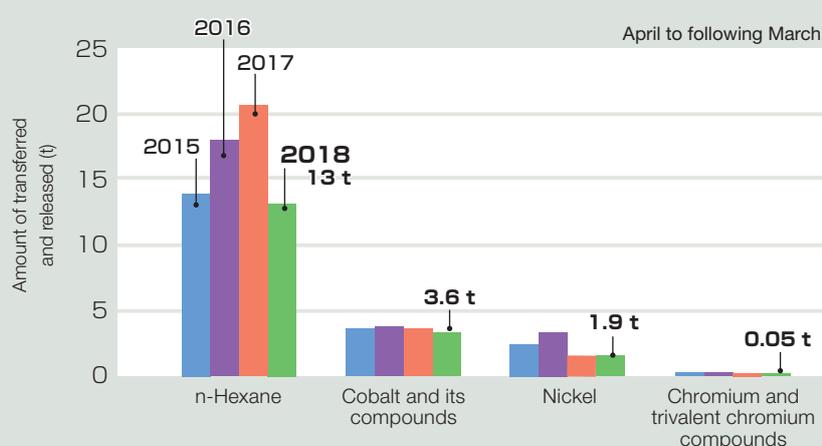
Management of Chemical Substances



Chemical substances may cause harmful effects on the ecosystem and the human race. To prevent the leakage of these chemical substances to the environment, we aim to totally abolish the use of the harmful substances or replace them with alternatives, while implementing thorough management of the specified harmful substances.

Status of handling of PRTR Law-related substances

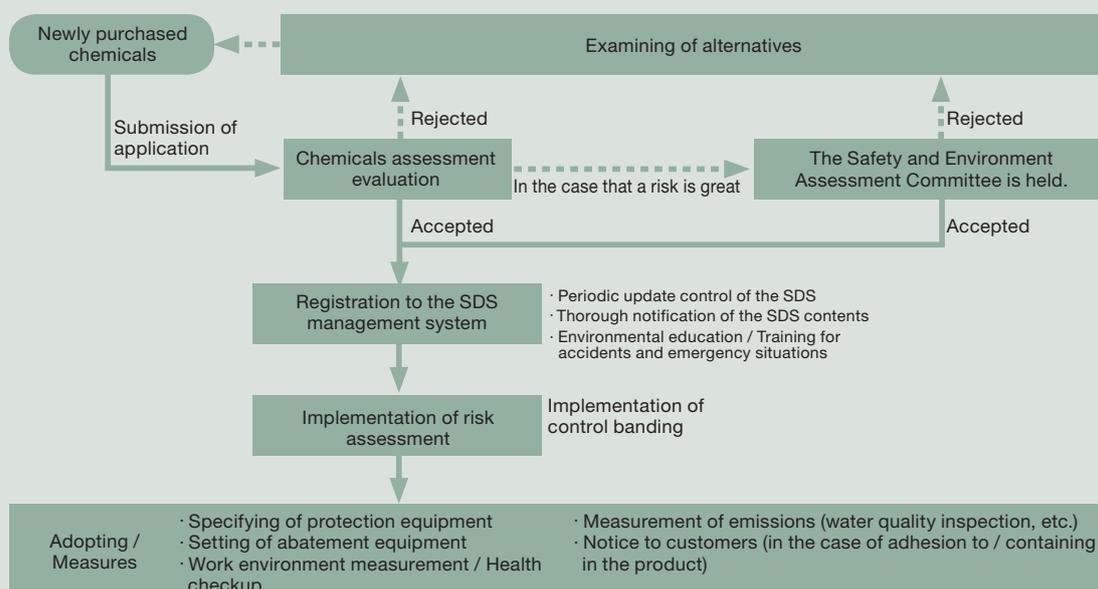
In 2018, we handled 7 substances more than 1 t in the year, among the 462 substances specified by the PRTR Law. Of these substances, 4 substances shown in the graph were transferred or emitted into the environment. n-Hexane is solvent, and others are raw materials.



Assessment

We have been continually performing assessments for new buildings, facilities, and chemical substances prior to the implementation to avoid risks.

As for newly purchased chemicals, we implement measures and call attentions as needed in addition to the periodic collection of Safety Data Sheet (SDS) after assessment evaluations. We reject the adoption according to the risk level and the difficulty of the measure and examine alternatives in some cases.



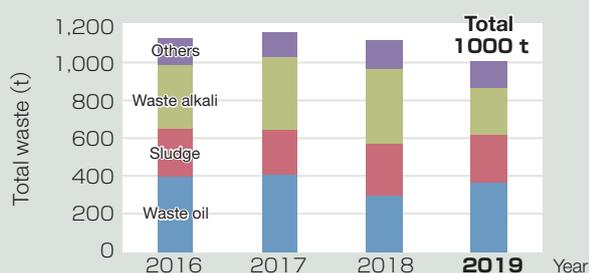
Waste and Recycling



We promote proper segregated disposal of waste. Since 2004, we have been keeping “the ratio of landfill disposal rate to the total waste less than 1% (Zero Emission)”.

Total waste

Compared with 2018, it decreased about 10%.



Landfill disposal rate

It was 0.04% In 2019.



Visit to our waste disposal contractor

We visit our waste disposal contractor on a regular basis to check the disposal status and ensure the compliance.



Collection of used products

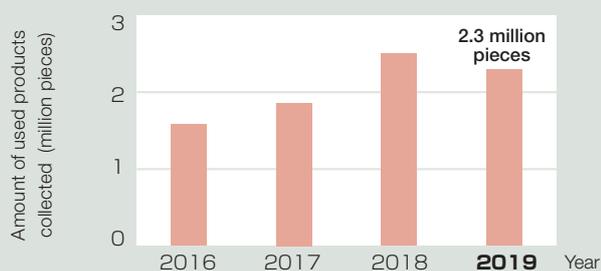
Measures have been taken for collecting and recycling of used products.



The collecting service of the used products is available only in Japan.

Recycling of used products

Compared with 2018, the amount of used products collected decreased about 10%.





Pollution prevention

Voluntary control standard values stricter than those specified by various laws and regulations including the Air Pollution Control Act and the Water Pollution Prevention Act have been established at each plant to measure and observe exhaust air from boilers, treated water at effluent treatment facilities and noise at property boundaries. Moreover, we are making efforts to understand risks and take measured against them through implementation of assessment before new introduction and periodic review of results of environmental impact assessment.

Water conservation



At Tungaloy, water is used as water for living use for our employees to wash their hands, etc., washing water associated with production and water for cooling of equipment. Basically, cooling water is recycled.

Environmental Education



Environmental education and training for accidents and emergency situations are provided to all employees to continuously improve the environmental conservation activities.

- ◆ Environmental education is provided to have each and every employee become aware of what influence is caused on the environment by Tungaloy's businesses and the employee's work, or of how the environmental change affects our business or work including the good and bad aspects.
- ◆ Trainings are held by setting accidents assumed for each facility and equipment owned. We use the actual things as much as possible for measuring instruments, collection materials for leaked substance, and protective equipment. After training, we also check the ease of use and handling.



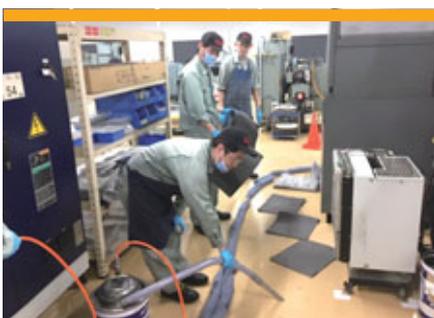
New employee education



Periodic education



Meetings before/after training



Simulation of leakage and recovery of grinding fluid



Wearing and confirmation of chemical-resistant protective equipment



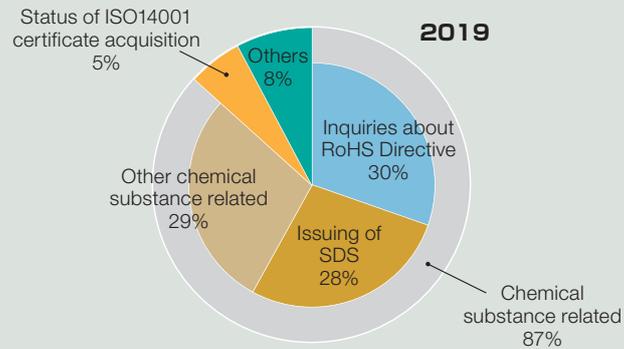
Confirmation and replenishment of installed materials for emergency response

External Communication

To enhance mutual understanding with stakeholders surrounding Tungaloy (local residents, employees, customers, suppliers, stock-holders, etc.), we are carrying out the activities to coexist with local communities.

Inquiries from stakeholders

Many inquiries were received regarding the status of chemical substance management, such as the revision on EU regulations and the compliance with RoHS directive.



Iwaki Headquarters

We weeded and cleaned the riverbank of the Yoshima river in Iwaki city with the local people.



Kyushu Campus

We participate in simultaneous community cleaning activities every month.



Nagoya Campus

We participated in the exhibition at the Nisshin Wai-Wai Festival held by Nisshin city



Materials & Components Division

We actively hold factory tours for local schools.



Materials & Components Division

We participated in an open factory event held by Nirasaki Syokokai.

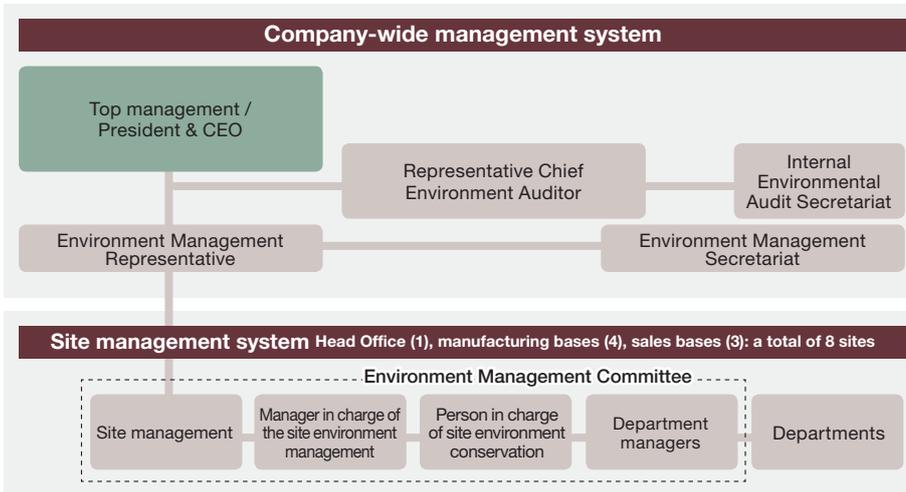
T-BCP



We have launched and made efforts for Tungaloy Business Continuity Plan (T-BCP) since 2016. We have been preparing for disaster prevention, disaster mitigation, evacuation and post-disaster recovery so that we can continue our business even in emergencies such as disasters.

Environment Conservation System

Tungaloy has been promoting the management system for systematically improving and understanding the influence of our corporate activities and products on the environment.



Tungaloy Corporation
EC97J1123
ISO 14001:2015 · JIS Q 14001:2015

Site information	Business operations				
	Headquarters function	Production control / Purchasing	Development / Design	Production	Marketing / Sales
Headquarters 11-1 Yoshima-Kogyodanchi, Iwaki, Fukushima	●		●		●
Manufacturing bases	Iwaki Campus 11-1 Yoshima-Kogyodanchi, Iwaki, Fukushima	●	●	●	
	Materials & Components Division 114 Kamijo-Higashiwari, Okusa-machi, Nirasaki, Yamanashi		●	●	●
	Nagoya Campus 77-1 Chaen, Asada-cho, Nisshin, Aichi			●	
	Kyushu Campus 3-7-57 Miyanojin, Kurume, Fukuoka			●	
Sales bases	Shin-Yokohama Office (Tokyo Regional Branch) Yusen Shin-Yokohama 1Chome Bldg., 1-7-9 Shin-Yokohama, Kohoku-ku, Yokohama, Kanagawa				●
	Nagoya Regional Branch 77-1 Chaen, Asada-cho, Nisshin, Aichi				●
	Osaka Regional Branch 2-1-10 Nankokita, Suminoe-ku, Osaka				●



Iwaki Headquarters



Materials & Components Division



Nagoya Campus



Kyushu Campus



Tungaloy Corporation

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