



# Tungaloy Environmental Report 2019



**Tungaloy Corporation**

# Message

The year 2018 of Japan was a year with many disasters as symbolized by the "disaster" of "Kanji of this year" (a Japanese character chosen to define that year). In greater or lesser degrees, various regions in Japan suffered the damages from natural disasters: earthquakes with an intensity of upper-5 or more, such as Osaka Earthquake and Hokkaido Eastern Iwate Earthquake; strong winds, long rains, and heavy rainfalls caused by typhoons and seasonal fronts, such as 2018 Japan floods; associated landslides; heavy snows and tremendous snowfalls in Kanto and Hokuriku regions; and intense summer heat. There are still some regions that have not been restored, and we strongly feel the impact of the environment on people's lives. When looking at the world, extremely high or low temperatures, droughts, heavy rainfalls, earthquakes, and tsunamis are happening. We send our condolences to people who lost necessities of life and bereaved families by the disasters and pray for them to recover peaceful days without a moment's delay.

The "environmental impact on people" includes not only direct impact of natural phenomena but also the malfunction of social systems, such as the shutdown of Kansai International Airport and the large-scale blackout in Hokkaido. This means that, while people are small in front of the fury of nature, there still is a lack of preparation on our side and are things that we need to do. To alleviate the expected harmful effects, we need not only physical preparation but also operational schemes and mental preparation. In the future, companies will, or already have, become responsible for the response and adaptation to "things beyond expectations" and the continuation of providing their value. It is hard to reach there at a leap, but Tungaloy is making progress through the operation of BCP.

An international meeting on climate change was held in Katowice, Poland in December 2018, and implementation guidelines have been adopted for full operation of the Paris Agreement after 2020. Japan has set a goal, by the fiscal year 2030, to reduce greenhouse gases by 26% compared to the fiscal year 2013. Tungaloy also places energy conservation activities as a priority issue and conducts promotion of various measures and verification of the effects.

In September 2015, an international standard on environmental management system, the ISO 14001 was revised, and the revised ISO 14001 has required environmental conservation activities to be more feasible and more integrated with the business activities. Our company acquired the ISO 14001 in 1997, an industry first for the cemented carbide tool manufacturing industry in Japan, and this year marks the 22nd anniversary. 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 2018. Your kind understanding and honest opinion would be very much appreciated.

April 2019  
President & CEO  
**Tungaloy Corporation**  
**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 reviews the needs and expectations from customers and stakeholders, develops new state-of-the-art products and technology with consideration for environment and provides a high quality product with short delivery time in order to contribute to the manufacturing of customers.

Tungaloy operates business activities based on law-abiding spirit and preservation of global environment and aims for enhancing the company's value while continued growth.

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 AS 9100, ISO 9001 and ISO 14001, while upholding all international standards, laws, regulations and agreements regarding quality control & environmental control subjects.
- ◆ Tungaloy views product quality and environmental protection as important as ensuring company's success and profit.
- ◆ Tungaloy will convey the policy to the employees and to the relevant factors.

- ◆ Tungaloy will address the following in order to realize the policy
  - Educating and qualifying employees as necessary to meet product quality standards and environmental standards.
  - Supervising inspection method, production method and control method in all stages of processes in order to continue the improvement.
  - Not only trying our best to improve business activities that affect environment but also preventing an accident and contamination for a new change, aiming to improve our environmental performance.
  - In addition to working on energy and resource saving, promoting Reduce, Reuse and Recycle to create recycling society and continuing zero-emission, aiming to utilize sustainable resources.
  - For substances that burden environment, applying alternate technology and switching to alternative substance as much as possible. Thoroughly controlling substances that cannot be switched to alternative substance for its use.
  - Creating among employees a strong sense of recognition that each employee is responsible for the process/product he/she is in charge of as well as Tungaloy owes preservation of global environment as corporate responsibility.
  - Tungaloy's management will provide the necessary human resources and equipment and will make them available.
  - Tungaloy's management will place objectives in areas of quality and environmental control accompanied by measurable criteria, will monitor them to evaluate their level of success and will audit/evaluate regularly.

# 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.

CBN insert with innovative brazing technology

## T-CBN SERIES 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/jp/product/t-cbn-series/>

Powerful high-feed milling cutters with improved metal removal rate

## MILLQ<sup>UAD</sup>FEED



MillQuadFeed allows highly-efficient machining with a large depth of cut up to 2.5 mm and with a high feed rate up to 2.0 mm/t. As the design of insert constraining section and cutting edge prevents lifting of the insert and fracture of cutting edge, a higher stability in machining and fracture resistance have been realized.  
<https://www.tungaloy.com/jp/product/millquadfeed/>

Shoulder milling cutters

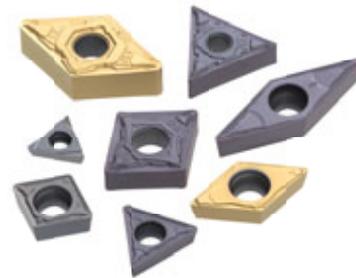
## TUNGTRI<sup>RI</sup>SHRED



TungTriShred insert has two cutting edge varieties: serrated edges for roughing and straight lines for finishing. The unique pocket positioning ensures the cutting edge with a low cutting force and fewer gaps. TungTriShred provides high efficiency in roughing operation and good machining surfaces in finishing operation.  
<https://www.tungaloy.com/product/tungtri-shred/>

Cermet grade for steel turning

## NS/GT/AT9530



The smooth and tough layers with both hardness and toughness realize super-excellent fracture resistance beyond the usual cermet products, and it can replace P15 grade cemented carbide tools. Smooth surface technology prevents adhesion and chipping as well as ensures high wear resistance.  
<https://www.tungaloy.com/jp/product/iso-turning/>

Indexable endmills for highly-efficient milling

## DOT<sup>TWIST</sup>BALL



By adopting a unique twisted-shape insert, a strong and rigid clamping structure has been realized. A stable and long life is ensured in rough machining. Also, the combination of three types of holders and an insert of radius type or of high-feed type allows different use according to the purpose of use.  
<https://www.tungaloy.com/product/dotwistball/>

Multi-function and highly-rigid face milling cutters

## DOT<sup>TRIPLE</sup>MILL



This face milling cutter has square, octagonal, and round inserts that can be fit in the same cutter body. The improved clamping structure reduces lifting of inserts and stress applied on the screws during heavy cutting.  
<https://www.tungaloy.com/product/dottriple-mill/>

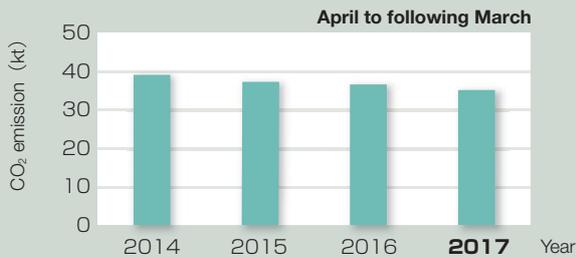
# Environmental Conservation Activities by Tungaloy

## Global Warming Prevention / Energy Conservation Activities

We aim to prevent the global warming by reducing CO<sub>2</sub> emissions through energy-saving activity. Energy used by Tungaloy consists of electricity (about 90%), kerosene (about 10%).

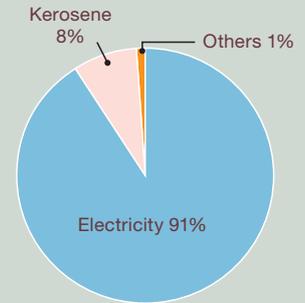
### CO<sub>2</sub> emission

Compared with 2016, it decreased about 3%.



### 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 2017, it increased about 7%.



### Amount of kerosene used

Compared with 2017, it decreased about 2%. The review on the setting of air conditioners continues to produce good effects.



### Energy Conservation Promotion Committee

In 2017, the Energy Conservation Promotion Committee was established for the purpose of acquiring knowledge on energy conservation, sharing information, and promoting activities, and the meetings are held regularly. Under a supervisor of energy management, it consists of environmental management personnel and equipment management personnel at each plant. They report the status of energy use in Tungaloy, the trends in Japan and overseas, and results

of energy conservation measures. They also discuss new measures.



### Received JTA Environmental Activity Award

Japan Cutting & Wear-resistant Tool Association (JTA), an industry group, recognizes activities that have contributed to environmental improvement as an Environmental Activity Award. In 2018, "Electric power peak shift" at Kyushu Campus and "Energy conservation by changing the setting of air conditioners" at Iwaki headquarters received the award. As a winner, the Kyushu Campus manager gave a presentation of a case study at the JTA environmental activity exchange meeting.

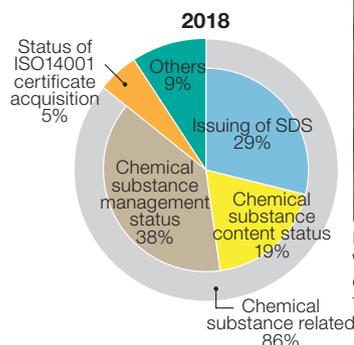


## External Communication

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.



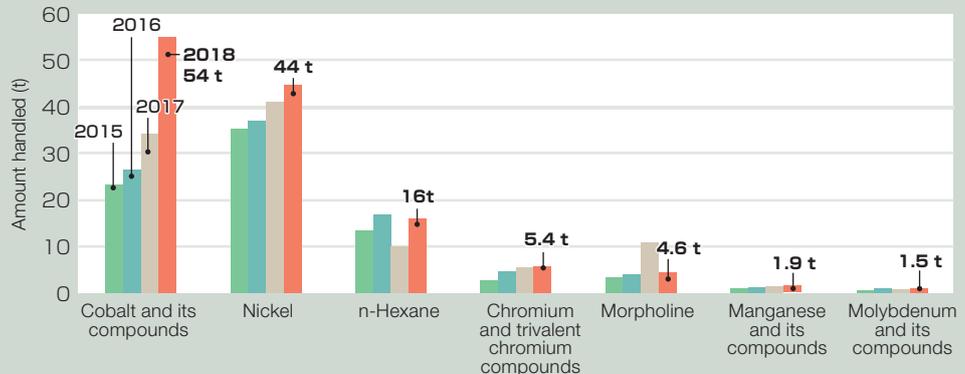
**Nagoya Campus**  
We participated in Zero Waste campaign in Nisshin city.

# 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

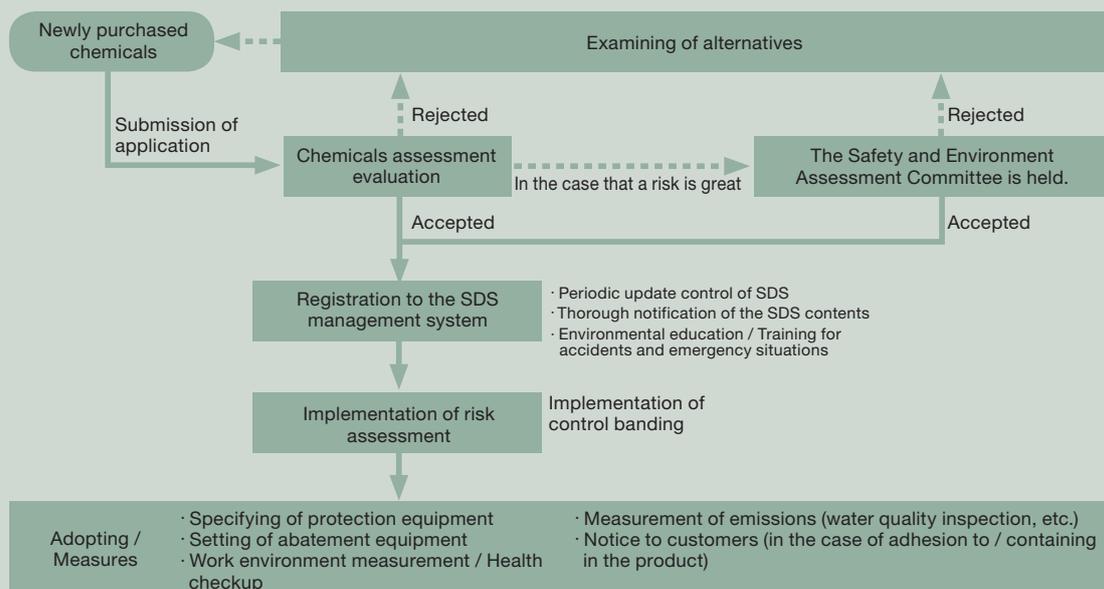
In 2018, we handled 9 substances more than 0.1 t in the year, among the 462 substances specified by the PRTR Law. Substance more than 1 t is the seven substances shown in the graph. n-Hexane and morpholine are solvent and others are raw materials.



## 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.



**Nagoya Campus**  
We participated in the exhibition at the Nisshin Wai-Wai Festival held by Nisshin city.



**Kyushu Campus**  
We actively hold factory tours for local schools.



**Materials & Components Division**  
We actively hold factory tours for local schools.



# T-BCP

Tungaloy's offices have often suffered from earthquakes, heavy rains, and tremendous snowfalls. We hope that we will protect the employment and trust from our customers and contribute to the reconstruction and development in the region by protecting the lives and good health of employees and their families and by continuing our business, even in a future disaster. In 2016, we have launched the Tungaloy Business

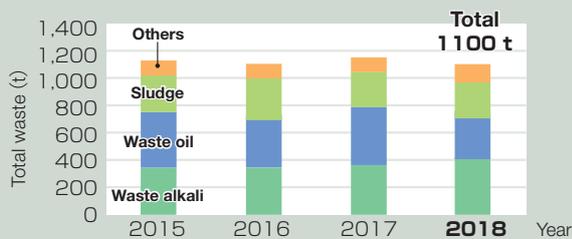
Continuity Plan; T-BCP. To be able to continue our business in an emergency, we have been implementing measures for further promotion of disaster prevention, disaster mitigation, evacuation and preparation for recovery after disaster. In 2018, we started regular monthly training on employees' safety confirmation responses for early response in the event of a disaster.

## 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 2017, it decreased about 4%.



### Landfill disposal rate

It was 0.03% in 2018.



### 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.



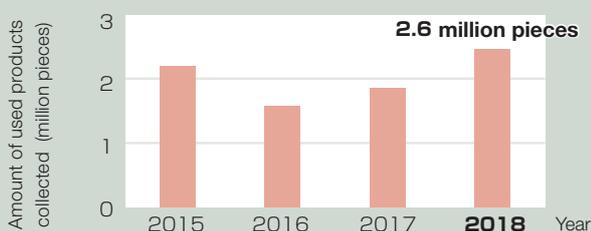
### Collection of used products

Measures have been taken for collecting and recycling of used products. (The collecting service of the used products is available only in Japan.)



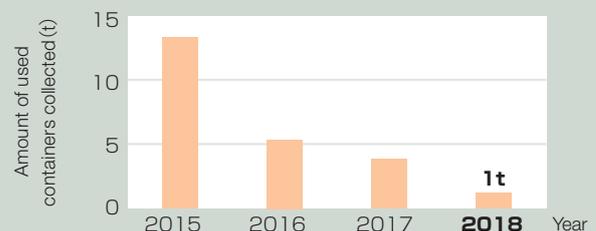
### Recycling of used products

Compared with 2017, the amount of used products collected increased about 38%.



### Recycling of used containers

Compared with 2017, it decreased about 74%. As common plastic or corrugated containers are used, it seems that recycling by customers has become a main stream.



# 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.

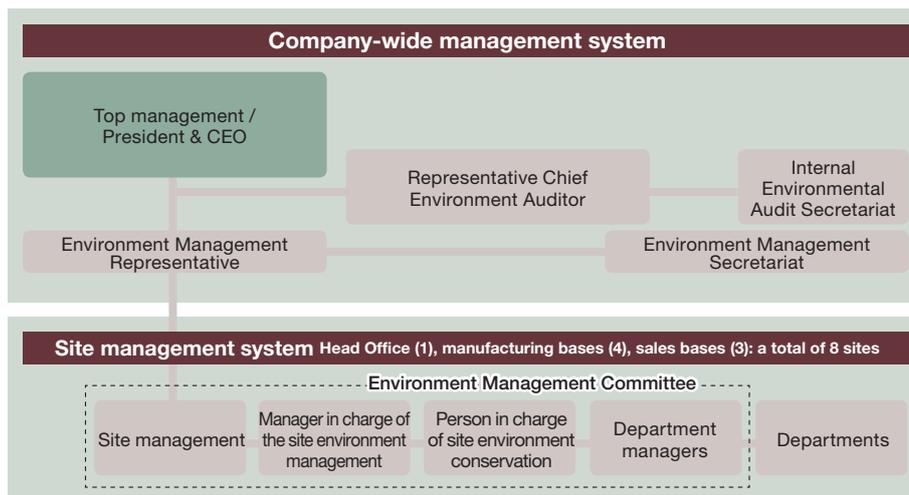


Trainings are held by setting accidents assumed for each facility and equipment owned. We use the actual things as much as possible for measuring instruments, collection materials for leaked substance, and protective equipment. After training, we also check the ease of use and handling.



# 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



Iwaki Headquarters



Materials & Components Division



Nagoya Campus



Kyushu Campus

	Site information	Business operations				
		Headquarters function	Production control / Purchasing	Development / Design	Production	Marketing / Sales
Headquarters	11-1 Yoshima-Kogyodanchi, Iwaki, Fukushima	●		●		●
	<b>Iwaki Campus</b> 11-1 Yoshima-Kogyodanchi, Iwaki, Fukushima		●	●	●	
	<b>Materials &amp; Components Division</b> 114 Kamijo-Higashiwari, Okusa-machi, Nirasaki, Yamanashi		●	●	●	●
Manufacturing bases	<b>Nagoya Campus</b> 77-1 Chaen, Asada-cho, Nisshin, Aichi		●		●	
	<b>Kyushu Campus</b> 3-7-57 Miyanojin, Kurume, Fukuoka				●	
	<b>Shin-Yokohama Office (Tokyo Regional Branch)</b> Yusen Shin-Yokohama 1Chome Bldg., 1-7-9 Shin-Yokohama, Kohoku-ku, Yokohama, Kanagawa (Sales offices: Tokyo, Nagano, Niigata, Fuji, Takasaki, Iwaki, Tohoku)					●
Sales bases	<b>Nagoya Regional Branch</b> 77-1 Chaen, Asada-cho, Nisshin, Aichi (Sales offices: Nagoya, Mikawa, Hamamatsu, Kanazawa, Toyota)					●
	<b>Osaka Regional Branch</b> 2-1-1 Edobori, Nishi-ku, Osaka (Sales offices: Osaka, Kyoto, Kobe, Okayama, Hiroshima, Fukuoka)					●



# **Tungaloy Corporation**

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