



Establishing a Recycling-based Society

In order to achieve a recycling-based society, it is necessary to reduce wastes and use limited resources while recycling them. Because a variety of resources, including metals, resins, and solvents, are used in products that the Tokai Rika Group produces, we are promoting the effective use of resources in all processes.

Promoting product designs and technological developments to make recycling easy

We are working to develop technologies that make use of recycled materials and to improve our products' ease of disassembly, and are promoting product manufacturing that will contribute to the formation of a recycling-based society.

Switching to raw materials that contain recycled materials

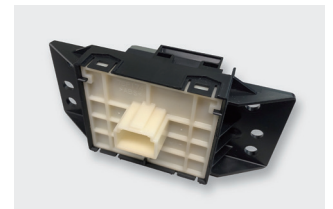
To support the effective use of natural resources, we actively promote the use of recycled materials. In some parts of the electric parking brake cover, we are working to further the effective use of natural resources by adopting resin materials which contain recycled materials that are made from crash-processing after resin molding, while maintaining product requirements.

Use of recycled materials

Approx. **0.5** t / year



Electric parking brake switch

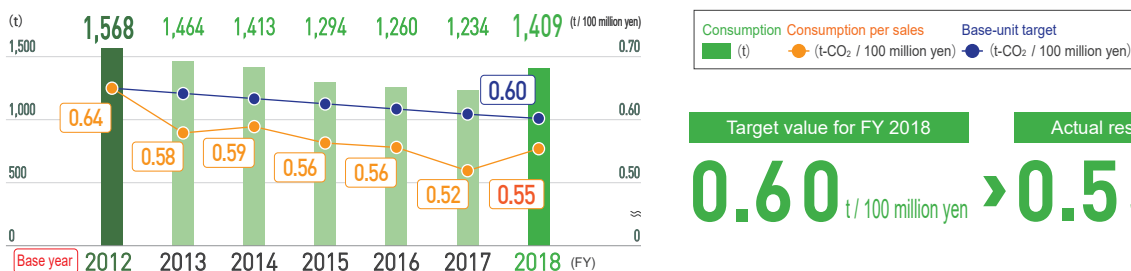


Usage areas of recycled materials (cream colored parts)

Effective use of resources and reduction of packaging and wrapping materials in logistics activities

In order to reduce environmental loads from distribution, we are actively reducing the consumption of wrapping and packaging materials, and are enhancing their recycling rate, for example by simplifying packaging and making packaging and wrapping materials returnable.

Trends in the amount of packaging and wrapping materials per sales



Enhancing tray recycling rates by changing the cleaning methods

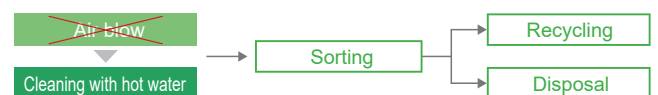
We sort the packaging trays for connector parts returned by our overseas subsidiaries by checking if there are deformations or dirt before they are reused. The trays had been disposed because of dirt until recently, but changing the cleaning method from air blow to hot water resulted in the enhancement of the recycling rate, and helped contribute to the reduction of packing material consumption.

Recycling rate

Improvement of **30%**

Target value for FY 2018: **0.60** t / 100 million yen
Actual result for FY 2018: **0.55** t / 100 million yen

Change of cleaning methods



Before improvement



Disposed due to dirt that cannot be removed by air blow

After improvement



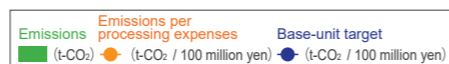
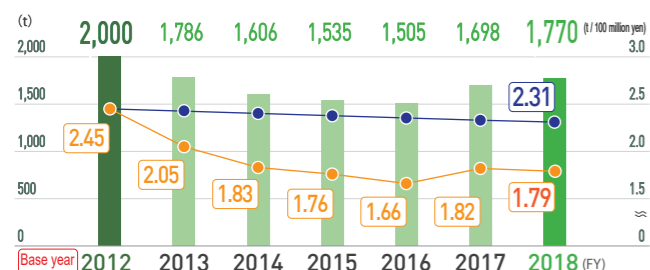
Recycling rate enhanced by cleaning with hot water

▶ Establishing a Recycling-based Society

Reduction of waste in production activities and efficient use of natural resources

We are continuously working on reducing the discharge of waste materials by using limited resources efficiently including improvement of production yield, reducing the rate of defects, implementation of 3R, and recycling natural resources.

Trends in discharge of waste materials per processing expenses



● Defect reduction of zinc casting parts

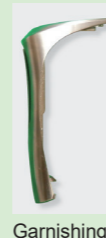
With regards to the garnishing of smart keys (decorative parts), we have adopted zinc casting parts that can achieve excellent design characteristics. Zinc casting develops a defect called flow marks in which the design surface solidifies before the molten metal is injected into the mold. In order to reduce this defect, we stabilized the mold temperature by applying feedback control, and modifying the equipment and molds to inject the molten metal into the mold smoothly. This resulted in the eradication of flow marks. We were able to simplify the secondary fabrication and reduce defect rates.



Smart key

- Equipment and mold modified
- Mold temperature stabilized

Less flow marks



● Recycling of waste materials from resin molding

Although we have used waste materials from resin molding from processes including injection molding and so on as recycled materials for some parts, we started to recycle waste materials we couldn't fully use because we were disposing them as industrial waste. We could sell them to some agents for thermal recycling. However, the transportation cost was an issue because the waste materials from resin molding are bulky. We were able to promote recycling and resolve this issue by reducing the waste volume by grinding the waste materials within our premises after introducing grinders.



Waste materials from resin molding

Before grinding process



Reduced to 1/50

After grinding process



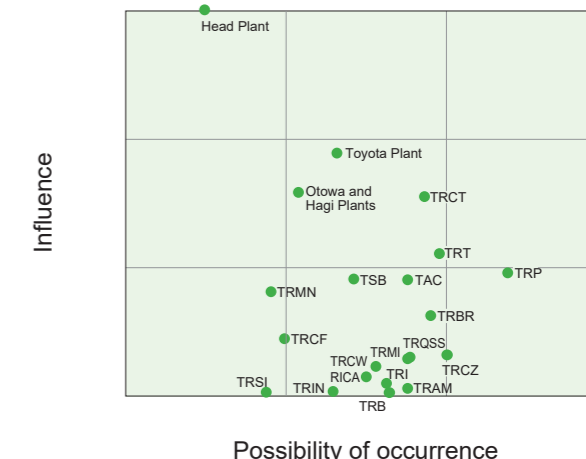
Reduction of the use of water in production activities

Due to an increase in the world's population and economic development, the problem of water shortages is getting more serious. In Tokai Rika, we understand that water is a precious resource, and are working on reduction of the use of water by increasing the efficiency of use and adopting reuse.

● Risk assessment on water at production sites

With the strengthening of regulations accompanying greater water demands due to climate change and population growth, and deteriorating water quality in rivers, the problem surrounding water is one of many important issues in business activities. At Tokai Rika Group, we are working to reduce water consumption by grasping whether water withdrawal is restricted in respective production sites in and out of the country, the amount of precipitation, and water withdrawal in order to conduct a risk assessment with "Aqueduct," the water tool for risk assessment by the World Resources Institute (WRI).

■ Risk assessment on water



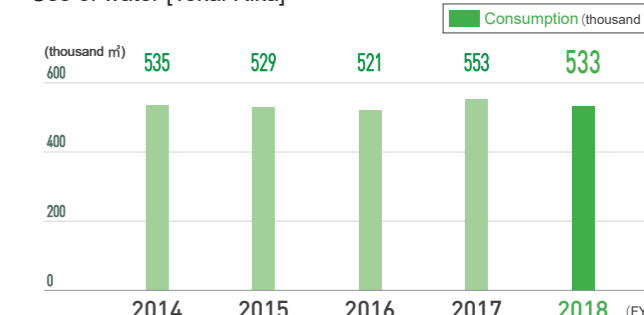
● Reuse of waste water in the semiconductor production process at the Head Plant

We use pure water to clean, and remove the smallest particles of dirt in the semiconductor manufacturing process. We are aiming to reduce the amount of waste water and the water we use by processing concentrated waste water that is produced in the manufacturing pure water process and some pure water used in dirt removal.



Water purification apparatus

Use of water [Tokai Rika]



* For data details, see the "2019 Eco Data File (<http://www.tokai-rika.co.jp/society/report/2019/index.html>)" on our website.

Topics

TRBR received the Toyota Brasa awards 2018

The project to reduce water consumption conducted at TRBR (Brazil) received the "Toyota Brasa Awards 2018." By changing the treatment method for waste water produced by the painting process, recycling waste water used after treatment has become possible. TRBR can significantly reduce water consumption and the amount of discharged paint sludge contained in waste water.



Awarded TRBR members

Water consumption

67% reduction

* Brasa: Brazil Automotive Supplier Association (Toyota Motor Corporation's overseas supplier cooperative association)

Voice

It was challenging to make improvements focusing on waste water from the painting process without affecting product quality. We have been able to contribute to the reduction of water consumption in cooperation with the coating department and the environment department. We are extremely pleased that our efforts have been recognized in this way.



TRBR (Brazil)
Edson Takao