



# ENVIRONMENTAL REPORT 2012

DIGEST VERSION

For the year ended February 29, 2012



## FOREWORD

### Regarding Japan's energy issues

Following the Great East Japan Earthquake, nuclear power plants in Japan have stopped operation one after another. As you are already aware, operation at all nuclear power plants in Japan was stopped as of this May. Within such circumstances, there is growing uneasiness among both households and industries regarding power supply this summer. Currently, energy policy is a major issue which concerns the national government.

In addition to impacting global economic conditions, such energy problems are also linked with global warming and depletion of resources. As such, energy problems will have a major effect on our future. In particular, it is urgent that domestic corporations take action in response to the increasingly stringent power supply and demand. Our company has established an organization for proactive promotion of energy-conservation measures. From manufacturing sites to offices, we are continuing thorough implementation of energy-conservation and power-saving measures. Such efforts to conserve energy are a societal demand towards corporations. In the future, energy-conservation will continue to exist as an element of CSR (corporate social responsibility) which is essential to corporations.

As a corporation which responds to the trust and expectation of society, our company will strive to further improve environmental measures as we seek to expand our business. I look forward to your continued understanding and support in the future.



May 2012  
HAJIME SATO  
President and CEO



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#### Range Covered:

**Domestic/** Company offices (total of 5 locations), Subsidiaries (total of 2 companies)  
Production Subcontracting Company(1 company), Sales agents (2 companies)

**Overseas/** Subsidiaries (2 main production sites)

Coverage centered on Company activities, with some affiliates such as subsidiaries/sales agents also included.

#### Period:

- The year "2012" represents the period March 1, 2011 to February 29, 2012.
- The year "2011" represents the period March 1, 2010 to February 28, 2011.



## ENVIRONMENTAL MANAGEMENT

### Progress toward ISO 14001 Certification

We have acquired ISO 14001 certification for all four of our domestic plants, all two domestic subsidiaries, one production subcontracting company, two domestic sales agents and two key production sites at our overseas subsidiaries.

In conjunction with our affiliates, we will continue activities to strengthen our overall promotion of environmental activities.

#### [DOMESTIC]

Company Plants		
Special Products	Ihara Plant	Acquired March 2001
Components	Ihara Plant	Acquired March 2001
Precision Products	Fujimi Plant	Acquired February 2002
Machine Tools	Kikugawa Plant	Acquired March 2002
General Administration Headquarters Research & Development Department	Headquarters Plant	Acquired September 2001 (Self-conformance declaration: September 2010)

Subsidiaries	
Star Metal Company Manufacturing Division	Acquired April 2006
Star Metal Company Plating Division	Acquired March 2007
Micro Sapporo Company	Acquired March 2007

Production Subcontracting Company	
BLUEEL Co., Ltd.	Ihara Plant Acquired October 2006

Sales Agents	
C.M.I. Company	Head Office/Osaka Office Acquired January 2006
Move Company	Acquired January 2006

#### [OVERSEAS]

Subsidiaries (Key Production Sites)	
Star Micronics Manufacturing Dalian Co., Ltd. (Dalian, China)	Acquired May 2002
Shanghai S&E Precision Co., Ltd. (Shanghai, China)	Acquired February 2003

#### [Self-Conformance Declaration]

In the headquarters plant, we have instilled activities performed through ISO14001 Environmental Management Systems since its certificate acquisition and environmental load has been almost completely eliminated due to the transfer of the plating processing department in May of 2009. We issued an ISO14001 self-conformance declaration in September of 2010.

Since issuing the self-conformance declaration, we have promoted environmentally-friendly business activities based on environmental policy.



## Environmental Audits

### [ Internal Environmental Audits ]

Internal environmental audits are conducted regularly each year at domestic plants and affiliates to confirm that environmental management systems are adequate and effective, and that environmental management programs are appropriate and legally compliant.

We also conduct skills enhancement seminars for internal environmental auditors to improve the expertise of people conducting internal audits.

A comprehensive environmental audit report is created listing items that fall below the expected standards, and the report is submitted to management as data for use in compiling the end-of-year environmental review. Thus audits contribute to improvements in the following year.



Training for auditors

### [ External Environmental Audits ]

Domestic plants and affiliates that have acquired ISO14001 certification are subject to environmental audits (environmental management system inspection) by an external inspection authority. Certification maintenance inspections take place once a year, while renewal inspections are conducted every three years.

The results of these inspections are submitted to management as data for use in compiling the end-of-year environmental review, thereby contributing to improvements in the following year.



Conducting an environmental audit

## Environmental Training

Star Micronics and its domestic affiliates believe that to maintain, and further improve, the level of our environmental activities, we need to change the mindset of every single employee. We therefore offer training opportunities for all employees from new hires to management. Training comprises four core categories: general, rank-based, leader-oriented, and specialist. In 2012 (domestic), we conducted events such as an introductory environmental seminar, an environmental manual seminar, an environmental impact evaluation seminar, a waste products seminar, a seminar on the cultivation of internal auditors, and an environmental law seminar.





## [Environmental Training Structure]

Training Category	Personnel Eligible	Internal/External Seminars Offered
General training	Regular employees	Introductory seminar, general seminar, waste products separation
Rank-based training	Managers	Managers' seminar
	Top management	Top management seminar
Leader-oriented training	Environmental leaders	Environmental manual seminar (including document management)
Specialist training	Environmental survey team	Environmental impact evaluation seminar
	Internal environmental auditors	Auditor development seminar (internal/external)*
	Personnel in charge of environmental law	Environmental law seminar*
	Public-sector environmental experts	Qualification seminar/test based on laws and regulations
	Personnel in charge of procurement	Green procurement seminar
	Personnel in charge of waste products	Waste products seminar
	Harmful substance handler	OJT by personnel with public-sector environmental qualifications
	Noise measurement personnel	OJT by certified internal environmental experts

\*For the certified internal environmental experts

## [Public, Environmental Qualified Person Related to Environment]

Name of Qualification	Number of Persons Qualified (Number of Persons Qualified in 2012)	Name of Qualification	Number of Persons Qualified (Number of Persons Qualified in 2012)
Safety manager	5 ( 0 )	Dangerous substance handler	78 ( 0 )
Public health manager	12 ( 0 )	Manager in charge of handling of toxic and harmful substances	3 ( 0 )
Pollution prevention manager	10 ( 0 )	Manager in charge of X-ray operations	1 ( 0 )
Manager in charge of industrial waste requiring special management	18 ( 0 )	Manager in charge of organic solvent operations	34 ( 0 )
Fire prevention manager	9 ( 0 )	Manager in charge of specific chemical substance operations	7 ( 0 )
Promoter of energy management and planning	3 ( 0 )		

Note: For the parent company only. Excludes domestic affiliates.



## Emergency Response

Every year, Star Micronics and its domestic affiliates plan and conduct emergency-related training of relevant parties and disaster prevention drills, as well as simulation-based drills for individuals and entire facilities based on manuals, which are evaluated as part of the process. These drills anticipate every conceivable accident or emergency (earthquake, typhoon, explosion, fire, blackout, chemicals leak, and airborne hazard, etc.).

### [Simulation-based Drills]



Oil leakage response drill



Response training for leakage of chemical substances

### [Disaster Prevention Drills]



Evacuation drill



Evacuation drill

## Status of Legal Compliance

Star Micronics and its domestic affiliates have stipulated internal regulations for the application of environment-related laws, and compliance with these laws is evaluated in accordance with a list of specific items to be monitored and measured.

Legal compliance is confirmed by checking that results measured are in line with management figures, and the data is stored as an environmental record. When installing, introducing, changing, or disposing of facilities and equipment, we conduct an assessment of the facilities and equipment to evaluate legal compliance.

In 2012, our company worked to ensure compliance with environmental laws and emissions standards at all domestic offices and affiliated companies. As a result, there were no violations of regulations or complaints from citizens in areas surrounding our facilities.



## ENVIRONMENTAL LOAD ASSOCIATED WITH BUSINESS ACTIVITIES

Our company uses a variety of resources and energy during the process of conducting business activities. This results in the emission of CO<sub>2</sub> and the generation of waste products. Our company assesses the environmental load associated with our activities and promotes activities to decrease environmental load by reducing the amount of energy consumed, reducing the amount of waste products generated and decreasing the amount of hazardous materials used.

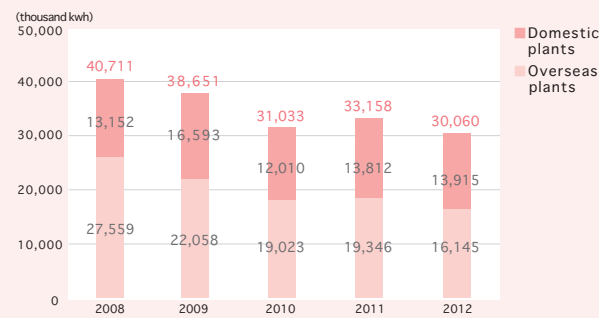
\*Scope of Analysis: domestic (Star Micronics Co., Ltd. and affiliated domestic companies), overseas (Star Micronics Manufacturing Dalian Co., Ltd.; Shanghai S&E Precision Co., Ltd.; Star Micronics Precision (Thailand) Co., Ltd. : from 2010)

### Change in Input Amount (Major Items)

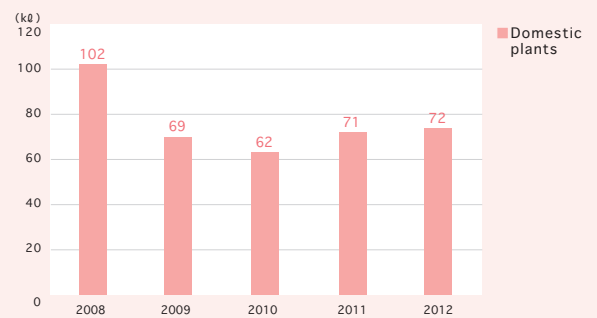
The usage amount for electricity and LPG decreased as a result of stopping operations at our Thailand factory (SMPT) due to flooding in Thailand.

The usage amount for water and steam decreased as a result of integration for dormitories at the Dalian Plant.

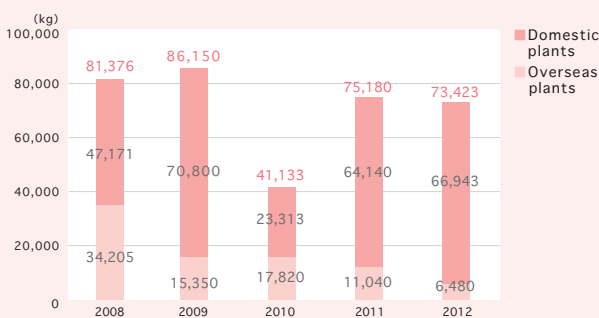
[Electricity Usage]



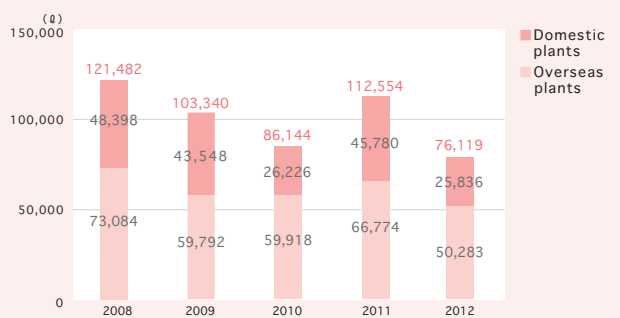
[Heavy Oil Usage]



[LPG Usage]



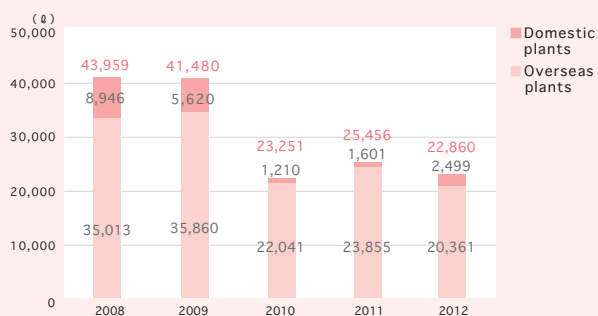
[Gasoline Usage]



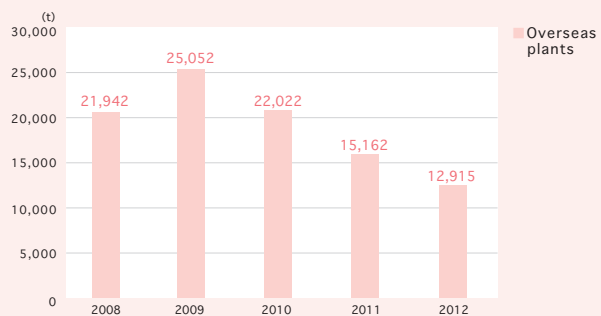
\*The increase in 2011 is due to an increase in thermal processing during domestic painting processes caused by an increase in the production of machine tools in 2011.



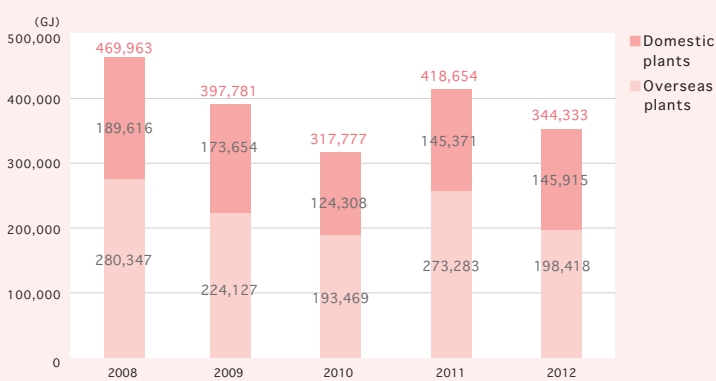
## [Light Oil Usage]



## [Amount of Steam Used]

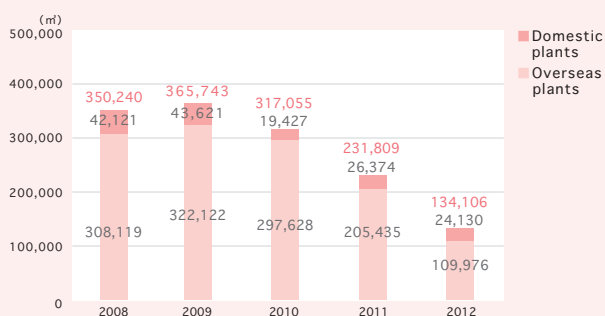


## [Total Amount of Energy Used]

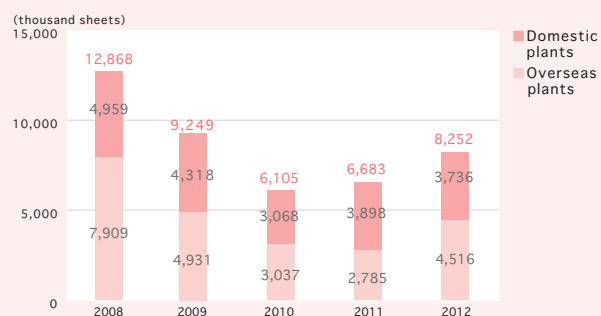


Note) Domestic numbers are used for the conversion factor of overseas energy.

## [Water Usage]



## [Copy Paper Purchased]

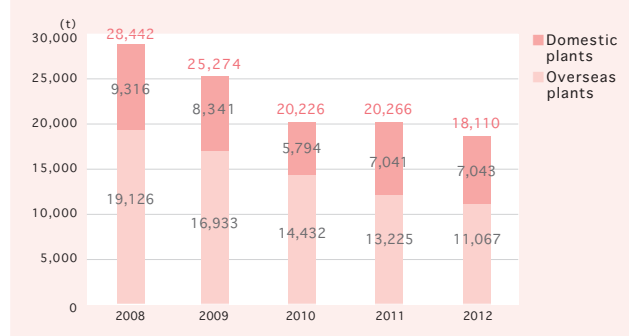




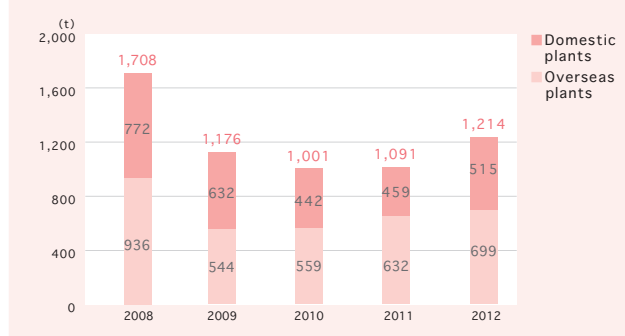


## Change in Discharge Amount (Major Items)

[CO<sub>2</sub> Emissions]



[Waste Generated]



## ENVIRONMENTAL ACCOUNTING

[Environmental Protection Costs]

(thousands of yen)

Category		Initiatives	Domestic		Overseas	
			Investment	Expenses	Investment	Expenses
Costs within Business Area	Pollution Prevention Cost	Prevention of air/water/ground contamination	1,100	10,271	0	4,705
	Environmental Preservation Cost	Energy conservation	4,870	843	0	201
	Resource Recycling Cost	Treatment/disposal of waste	0	9,424	0	464
Upstream/Downstream Cost		Green procurement difference	0	122	0	0
Management Activity Cost		EMS operation, education, on-site planting	0	38,512	0	2,795
Research & Development Cost		R&D, WEEE/RoHS measures	0	2,500	0	0
Social Contribution Cost		Donations, financial support	0	370	0	0
Environmental Damage Response Cost		Repairs for ground/water contamination	0	0	0	0
Total			5,970	62,042	0	8,165

Note: Excludes depreciation expense.

[Financial Impact Resulting from Environmental Protection Measures]

(thousands of yen)

Category		Domestic	Overseas
		Impact	Impact
Earnings	Gains from sales of marketable waste from business activities	10,304	43,715
Expense Reductions (Year on Year)	Total energy expense (electricity/heavy oil/LPG/gasoline/light oil) reductions	4,232	30,626
	Reductions in water/well water usage expense	707	4,567
	Reductions in copy paper purchase expense	-287	-218
	Reductions in waste disposal expense	-1,275	579
	Others	0	0
Total		13,681	79,269

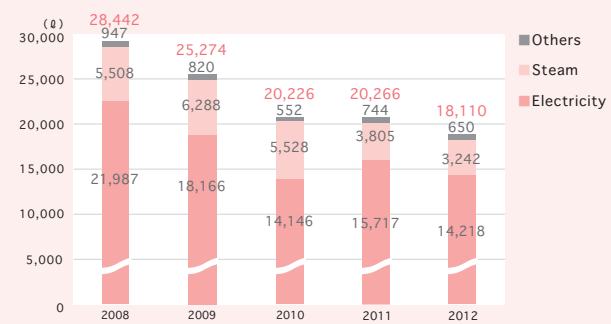
Note: In the expense reduction figures, a minus indicates that a reduction was not achieved and the expenses increased.



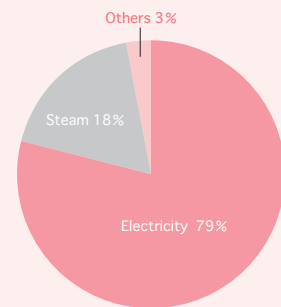
## REDUCTION OF CO<sub>2</sub> EMISSIONS AMOUNT ~TO PREVENT GLOBAL WARMING~

Our company is taking a variety of actions to reduce the amount of energy consumed and is working to reduce CO<sub>2</sub> emissions amount.

### Changes in CO<sub>2</sub> Emissions



### Breakdown of CO<sub>2</sub> Emissions (2012, domestic and overseas plants)



In 2012, we lengthened the Cool Biz Campaign as a part of energy-saving measures in response to summer power shortages caused by the recent earthquake.

### [Less Air Conditioning]

#### Cool Biz Campaign

1. Period Conducted: May 11 to the end of October
2. Air conditioning temperature: Set to 28°C  
(Although the campaign does not apply to manufacturing and reception areas, these are included as much as possible.)
3. Attire: No neckties or uniforms are worn

#### Warm Biz Campaign

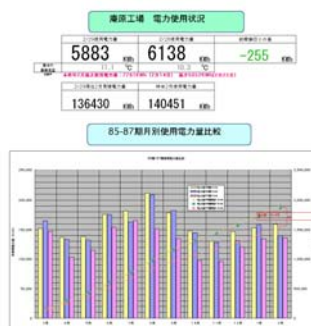
1. Period Conducted: December 1 to the end of March
2. Heating temperature: Set to 22°C
3. Attire: Employees are encouraged to wear warm clothes

Information is posted at the entrances to each office and visitors are urged to cooperate.

At the same time, we are increasing awareness towards energy conservation within our company through actions such as posting on our internal website the amount of power consumed daily and installing a power bulletin board in the hallways of offices.



Cool Biz information board



Information posted on internal website



Daily power usage rate posted in hallways



### [Heat shielding using roof shades]

In addition to shades which were installed last year on Building No.5 of our Kikugawa Plant, we have installed heat-shielding panels (roof shades) on the roof surface of Building No.3 at the same plant. As a result, we were able to alleviate the drastic temperature increases associated with summer. This has led to decreases in the amount of energy used for air conditioning.

Roof shades



### [Installation of Solar LED Lighting]

We installed solar LED lighting for the nighttime lighting on the premises of headquarters. These lighting facilities use solar energy and therefore do not consume energy in any way that contributes to CO<sub>2</sub> emissions.

Solar LED Lighting



### [Efficient and power-saving outside light]

We replaced mercury-vapor lamps in the headquarters plant with metal halide lamps and LED lighting which feature high-brightness, power-saving and a long lifespan. Metal halide lamps achieve power savings of approximately 50% and LED lighting achieves power savings of approximately 90%.



Metal halide lamp



LED light

### [Incandescent light in the showroom replaced with LED]

We replaced incandescent lighting used for spotlights in the headquarters' showroom with LED lighting. This has resulted in a 90% reduction in power consumed.

Incandescent light in the showroom replaced with LED





### [Green curtain]

In order to conserve energy used for air conditioning in the summer, we used goya (bitter melon) to create a green curtain at the Fujimi Plant. As result, it is said that temperatures decrease by 5°C or more on wall surfaces covered by the green curtain.

The curtain also leads to increased environmental awareness among employees.



Green curtain created at Fujimi Plant

### [The number of company cars owned]

In order to reduce the amount of CO<sub>2</sub> emissions by company cars, our company has implemented the use of lightweight cars and hybrid cars. We have also reduced the number of company cars used by our company.

(Number)

Type of Car Year	Ordinary Cars (Leased)	Ordinary Cars (Purchased)	Mini Cars (Leased)	Hybrid Cars (Leased)	Total
2011	36	6	8	4	54
2012	34	2	10	7	53

### [No-Car Campaign]

Every year, our company holds a No-Car campaign for employees who commute by car or motorcycle to offices within Shizuoka City. We implemented a 2-week No-Car campaign in both spring and autumn of this year.



#### Implementation Report

Period: Monday, May 23 - Friday, June 3, 2011  
Monday, October 3 - Friday, October 14, 2011

Participants: 87 individuals

Eco-commute distance: 3,128km

CO<sub>2</sub> reduced: 735kg  
(calculated based on fuel consumption of 10 km/ℓ)



### [Carbon Offset —Use of Emission Credit Trust—]

Considering the Kyoto Protocol's target for reducing greenhouse gases, our company has calculated that we should eliminate 5,000 tons of CO<sub>2</sub> emissions for the 5 years between 2007 and 2012. In August of 2008, we purchased 5,000 tons of CO<sub>2</sub> emissions credits as emission credit trust beneficiary rights from Mizuho Trust & Banking Co., Ltd. Our company then used the resulting decrease in CO<sub>2</sub> emissions amount to conduct a "carbon offset" that compensates for the CO<sub>2</sub> generation during production of the TSP100ECO printer, which was released in April 2010. We also used the carbon offset to compensate for the standby power and power consumed during use of the printers over a 5-year period. Our company bears 100% of the associated cost, thus enabling users of the ECO printer to participate in environmental conservation without incurring any additional burden. (Please refer to our company's official homepage for further details.)



ECO printer with carbon offset

## Response to the Revised Energy Conservation Act

### [Energy conservation activities by the Energy Conservation Panel]

Our company is a targeted business under the revised Energy Conservation Act. The Energy Conservation Panel was established to act as an organization for promoting compliance with the act throughout our company and for promoting energy conservation activities.

As part of actions, we have enacted "Compliance Items for the Promotion of Energy Conservation". These rules encourage each employee to be personally responsible for conserving energy in their own work area and to eliminate all standby electricity. In 2012, we further strengthened these energy conservation rules and implemented various actions in response to the spread of energy-saving measures due to the stoppage of nuclear power plants.





## • LOWERING ENVIRONMENTAL CONTAMINATION RISK

### Managing Chemical Substances

Star Micronics and its domestic affiliates have created and implemented internal regulations for the management of harmful substances and dangerous materials handled by the Company in order to ensure proper and safe management of chemical substances. These internal regulations, based on the relevant laws and statutory regulations, are designed to ensure that the environment is taken into account in the purchasing, storage, use and disposal of such substances.

#### [Response to PRTR Law]

In accordance with the PRTR (Pollutant Release and Transfer Register) Law, we have continued to submit notification regarding the emission and transfer volume for Class I Designated Chemical Substances. The annual handling volume of such substances has decreased greatly due to the use of powder paints which do not contain organic solvents (including substance subject to PRTR) and to a change to alternative materials. As a result, since 2011 there are no longer any offices or affiliated companies for which submission is required.

However, from the perspective of appropriate handling of chemical substances, we will continue to gather data on emission and transfer volume.

The emission/transfer amount of substances in 2012 was as follows:

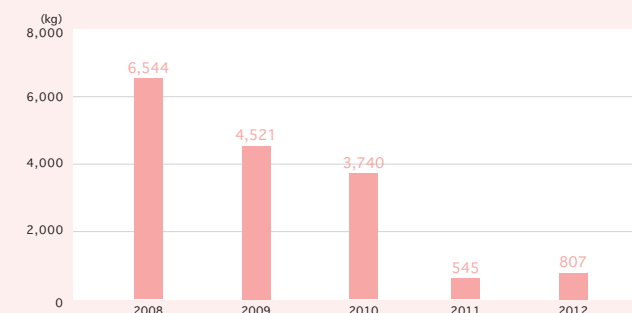
#### [PRTR Reports for all Domestic Plants and Affiliates]

(Unit: kg/year)

Year	Substance No.	Chemical Substance Name	Use	Emissions Volume			Transfer Volume		
				Air	Public Drainage Areas	Ground within Plant	Landfill within Plant	Washed into Sewage	Waste within Plant
2012	309	Nickel Compound	Chroming	0	0	0	0	1	105
	300	Toluene	Coating	633	0	0	0	0	4
	80	Xylene	Coating	56	0	0	0	0	4
	374	Hydrogen fluoride and water-soluble salt	Polishing	0	0	0	0	0	4
	Total			689	0	0	0	1	117

\*The PRTR (Pollutant Release and Transfer Register) Law is a means of obtaining, collating and disclosing emission and transfer volume data for harmful chemical substances.

#### Total Volume of PRTR Emission and Transfer





## Air pollution measures

### [Reduction of VOC Emissions Amount (Powder Coating)]

Our subsidiary company Star Metal Co., Ltd. has adopted a method of powder coating which does not use organic solvents (solvents containing substances subject to the PRTR Law). This powder coating method is used in the coating process for sheet-metal parts of the CNC automatic lathe in the Machine Tools Division. Use of the powder coating method allows our company to reduce environmental load at the manufacturing stage.

This new method has realized the environmental effect of cutting atmospheric pollutants (VOC) in half and reducing industrial waste by one-third.



Powder coating

## Response to EU Environmental Regulations

Environmental regulations in the European Union (EU) have had a significant impact not only within the EU region but also in various countries around the world, and many Japanese manufacturing industries have been forced to respond in some way.

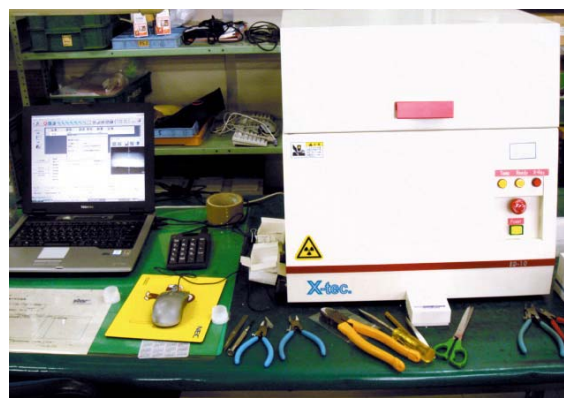
For our products that fall under WEEE and RoHS directives, we are operating based on our internal regulations for management of substances that burden the environment and on green purchasing guidelines. Furthermore, we are implementing response to the REACH Regulation and to the EuP Directive. The EuP Directive is a framework for eco-design of energy-related products in Europe and it defines requirements for environmental design in Europe for 2013.

We also completed notification for chemicals which are subject to the CLP Regulation (an EU regulation related to the classification, display and packaging of chemicals).

### [Introduction of X-ray Fluorescence Spectrometers]

We use X-ray fluorescence spectrometers to measure levels of chemical substances contained in components of our printers that fall under the WEEE and RoHS directives, as well as to conduct inspections on receipt of the components.

Our machine tools do not fall under these directives, but we have taken aggressive measures such as introducing X-ray fluorescence spectrometers to measure the composition of components with a view to reducing harmful substances. Components used in the actual machines in our key products are 99.3% RoHS compliant, excluding certain NC control equipment.



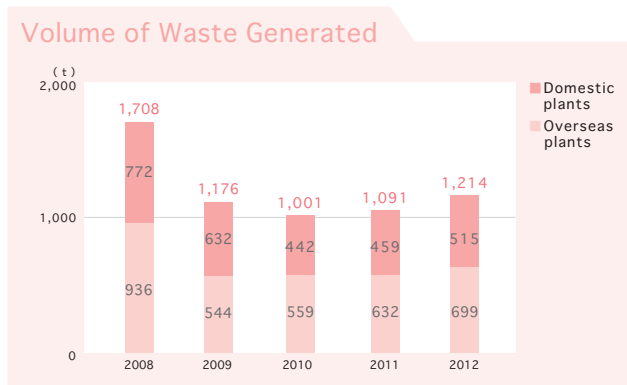
X-ray fluorescence spectrometer (Ihara Plant)



## PROMOTION OF REDUCTION AND RECYCLING ACTIVITY OF WASTE

Star Micronics and its domestic affiliates have created and implemented internal waste management regulations in order to properly dispose of waste produced from corporate activities in line with the requirements of the Waste Disposal Law and to promote voluntary activities.

### Volume of Waste Generated and Recycling Rate



Waste products generated in 2012 increased by 123 tons compared to the previous fiscal year. This increase was caused by increased production of machine tools and precision parts.

The recycling rate of 99.4% is achieved. Our company shall continue to instruct group employees regarding the dismantling and separation of trash in order to improve our recycling rate.



## SOCIAL CONTRIBUTION ACTIVITIES RELATED TO THE ENVIRONMENT

### Environmentally Friendly Policies

#### Awareness of Earth Environment (from the Star Micronics Group Code of Conduct)

- (1) In our efforts to control CO<sub>2</sub> emissions, comply with global warming directives and streamline business efficiency, we will implement business strategies utilizing energy saving equipment to help achieve our goals.
- (2) We will guide the establishment of the sustainable economic society with ecological awareness and promotion of environmental activities.
- (3) We will guide the realization of the recycling society, trying to utilize all possible resources at all steps from designing to disposal of our products and promoting the environmental load reduction.
- (4) We will recognize environmental issues worldwide and engage in them as a global company group.
- (5) We will report our environmental protection activities widely and promote the environmental communications with the society.



## Social Contribution Activities

CSR activities at Star Micronics entail an active role in contributing to society with the co-operation of our employees.

### [Clean-up Activities at Miho-Masaki Beach]

On June 4th 2011 (Sat.), our company participated in volunteer clean-up activities at Miho-Masaki Beach sponsored by the Association for Environmental Safeguards of Shizuoka City. This year, a total of 26 employee volunteers and family members participated in the activities. Everyone got some refreshing exercise under the clear blue skies of early summer as they worked hard to clean up trash and protect the shoreline.



Clean-up activities



Participants from Star Micronics

### [Tree-planting and clean-up activities in China]

Every year, community cleanups and greenery activities are performed by volunteer employees from Star Micronics Manufacturing Dalian Co. Ltd., a major overseas production center of our company located in Dalian, China.

On April 9th 2011 (Sat.), 60 employee volunteers participated in tree-planting activities in Dalian City. We planted more than 800 paulownia trees in order to change the dry, rocky mountain into a mountain overflowing with greenery.



Tree-planting activities

Also, on June 11th 2011 (Sat.), volunteers conducted clean-up activities on nearby Mt. Dahei. Under early summer skies, 106 participants got some exercise while collecting more than 50 bags full of garbage.



Clean-up activities





### [Assistance for NGOs/NPOs]

We became a corporate member of OISCA (The Organization for Industrial, Spiritual and Cultural Advancement International) in September 2006, at the same time establishing the Chubu branch of OISCA's Shizuoka Prefecture office.

OISCA is an international NGO that has been involved in human resource development, agricultural development, and global environmental problems, mainly in the Asia-Pacific region, since 1962. Its activities have been praised by international organizations and governments of numerous countries, and it has been awarded the UN Earth Summit Award.



## Publication of the Environmental Report

From the perspective of conserving the environment through such measures as reducing energy usage and saving resources, Star Micronics does not publish its Environmental Report in paper form. Instead, the report is published on the Star Micronics website as a PDF-format file.

Environmental activities of Star Micronics...<http://www.star-m.jp/eng/company/co05.html>

For enquiries regarding this environmental report, please contact the CSR Promotion Group within the General Affairs Office  
Tel: +81-54-263-1302 Fax: +81-54-263-1057

