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E n v i r o n m e n t a l R e p o r t



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## Company Overview

as of the end of March 2003



### Company Name

TAMURA CORPORATION

### President

Naoki Tamura

### Head Office

1-19-43 Higashi-Oizumi, Nerima-ku, Tokyo

### Business Description

Information equipment manufacturing,  
Electronic components manufacturing,  
Electrochemical products manufacturing,  
Soldering equipment manufacturing

### Capital

11,829 million yen

### Number of Employees

6,980 on a consolidated base  
Japan (1,392) Asia (5,481)  
Europe (82) America (25)

### Sales (Japan)

72,630 million yen on a consolidated base

### Sales (Overseas)

38,355 million yen

## Editorial Policy



"Environmental Report 2003", Tamura's second annual environmental report, describes the company's environmental activities during the FY2002 (from April 2002 to March 2003) and its future plans. Because this report is to serve as an important mutual communication tool and is intended for our customers, business partners, shareholders, investors and the general public, we tried to make it as easy to understand as possible. We will continue improving the report based on readers' opinions and suggestions. Your comments are most welcome and can be sent via e-mail (webinfo@tamura-ss.co.jp). Tamura's environmental report will continue to be issued annually.

## Message from the President

The Tamura Group will soon mark its 80th year. Its business is based on the electronics industry and has grown in parallel with the development of the industry. While electronics technologies progressed remarkably, our quality of life improved dramatically and these days we almost feel that the barrier of time and distance are removed. We must not, however, forget that such progress came with a price: environmental problems. The second Earth Summit held in Johannesburg, South Africa, in 2002 posed a question of how we humans should treat our planet. Environmental issues are global concerns and actions are required at all levels to address them.

The EU Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) came into force in February 2003. The use of lead, cadmium, mercury, hexavalent chromium and certain brominated flame retardants in electrical and electronic equipment will be banned in the EU from July 2006. In order to respond to these changes, we conduct in-house analysis to levels as low as ppm to make sure that hazardous substances including lead, cadmium, mercury and hexavalent chromium are not contained in the products we supply to our customers. For our business partners such as parts and material suppliers and assembling and manufacturing companies, we established green procurement criteria and promote the understanding of the Tamura Group's policies on environmental issues. We make extensive efforts that cover the whole supply chain. Also, we contribute to achieving a total phase-out of lead in electrical and electronic products by developing Pb-free soldering technologies and by manufacturing and selling equipment and components that embed the technologies.

In the FY 2002, we made some achievements including the introduction of environmental assessment of all the products we develop and establishment of an environmental accounting system. Continued efforts will be made to further pursue our environmental protection activities, with focuses on improving the environmental performance of our products, obtaining ISO 14001 certification for all of the Group's production bases both inside and outside Japan and expanding the scope of our environmental report.

We issue an environmental report every year to promote the understanding of Tamura's environmental protection activities among many more people. We will further improve our achievements that are described in this report, and will solve the problems that have emerged, working as a whole company. Your comments and suggestions on this report are highly appreciated.

September 2003



Naoki Tamura  
President



### **Group Mission Statement**

The Tamura Group supplies an original range of products and services, highly regarded in the global electronics market, to satisfy the evolving needs of customers, employees and shareholders supporting the Group's growth.

### **Group Vision**

1. The management of the Tamura Group is based on businesses related to the requirements of the global electronics industry.
2. The business of the Tamura Group is based on technologies that support rapidly diversifying customer needs, with a special focus on high market value.
3. The Tamura Group evaluates its employees with fairness and highly rates excellent performance and exceptional productivity.



## Reduction of Environmental Impact

To reduce environmental impacts, Tamura Corporation actively pursues to reduce energy and water consumption, waste generation and CO2 emissions.

### Trends in Total Energy

#### Consumption and CO2 Emissions

Energy consumption consists of electricity (98.9%), fuel oil A (0.2%), utility gas (0.3%), LPG (0.6%). Total energy consumption increased by 3.9% over the FY 2001. This was caused by an increase in the use of utility gas due to an increase in production. We aim to reduce energy consumption by improving the efficiency in manufacturing. Meanwhile, CO2 emissions from energy use increased by 1.2% over the FY 2001. This was caused by an increase in electricity use at Saitama factory and utility gas use at Tokyo and Saitama factories.

### Water Consumption Trends

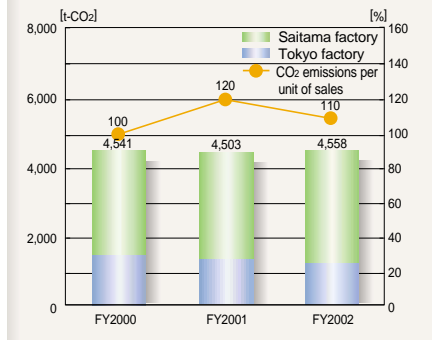
Water consumption decreased by approximately 38% compared with the FY 2001. This was attributable to the repair and improvement of the aging water piping. As a next step, we will

consider recycling water and improve the methods of product testing.

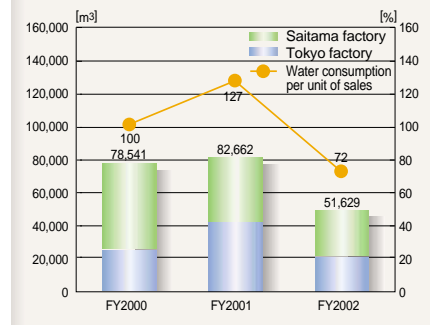
### Waste Generation Trends

To achieve zero emissions, Tamura Corporation strives to ensure proper treatment of waste and to improve recycling rates. Total waste generation was reduced by 14.5% and the amount of waste for final disposal was also down by 68% over the FY 2001.

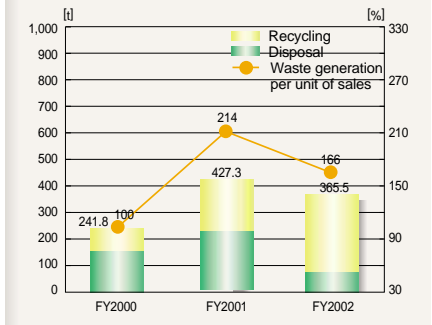
### Trends in CO2 Emissions



### Water Consumption Trends



### Waste Generation Trends



## Technological Development

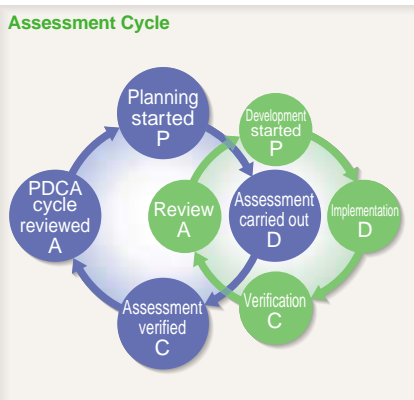
Tamura Corporation conducts detailed product assessments in developing and designing products. Several projects are also underway including a Pb-free soldering project in an effort to phase out the use of chemical substances such as lead that are supposedly harmful to the environment.

### Assessment Cycle

At Tamura Corporation, product designers assess every product on the basis of environmental impacts. In assessing products, product designers not only predict and evaluate the

magnitude and scope of the impacts that the products exert on the environment but also formulate possible ways to mitigate them. The designers evaluate the utility of products on one hand and their environmental properties such as recyclability and disposability on the other. Product environmental assessment is conducted at every stage of product development. All of our products are assessed against certain criteria, and if one or more criteria are not met, product design is reviewed according to our assessment cycle, which is closely linked to the product planning PDCA cycle as shown in the figure below.

terminals and printing circuit boards. Data collection and experimentation began in 1999, and a project was launched in October 2001 to collect more detailed data. The composition of Pb-free solders for trans terminals and printing circuit boards was carefully chosen, with great importance being placed on the reliability of the products. Pb-free solders have to be treated with more care than conventional solders because of particular requirements arising from their characteristics. Tamura started supplying products that use Pb-free solders in 2000 to respond to our customers' request, and is working hard to complete the conversion to Pb-free trans terminals by the end of 2003 and Pb-free printing circuit boards in June 2004.



### Pb Free

Tamura Corporation is phasing out the lead contained in solders for trans

## Eco-friendly Products

We take advantage of our knowledge, experience and achievements in Pb-free soldering technology for our electronic component business, and develop compact adapters that require less standby power as well as Pb-free components and products.



(HC33-32LF2)

### Pb-free Wave Soldering Equipment

Tamura's comprehensive technologies in Pb-free soldering are employed in the development of this product. It makes great contributions to the prevalence of electronic appliances that embed Pb-free soldering technologies.



(TNP25-537PH)

### Pb-free Reflow Soldering Equipment

Tamura's reflow system for Pb-free soldering, the first of its kind in the world, was developed based on the characteristics and reliability of Pb-free solders and is excellent in quality and user-friendliness.



(TS-5)

### Adapter for General Appliances

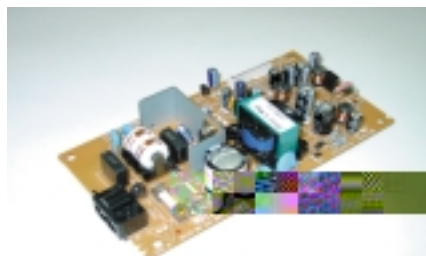
To maintain customer satisfaction, Tamura has developed this high quality adapter with ultra light, energy saving, and Pb- and PVC-free. This adapter is also used as a power source in general appliances, such as digital cameras, PC peripherals and CD/DVD equipment.



(PLW1947N)

### Energy-saving Adapter for PCs

This energy-saving adapter for PCs, which requires less standby power and is high in efficiency and low in noise, meets the target for phase three, which was set in the European Commission Code of Conduct on Efficiency of External Power Supplies.



(DVDSWPSV)

### Power Supply for DVD Equipment

This product is used as a power supply for DVD equipment, etc. and has a wide power input range of 90V to 264V when used as a multiple output power source. It requires no-loaded standby power of only 0.05W, thereby reducing standby power consumption to one third of that of conventional models and achieving a cost cutting of 3%.



(36FSLR, etc)

### Adapters for Mobile Phones

These AC adapters for mobile phones are compact in size and available in different plug configurations for different countries. These products use constant voltage and constant current circuits and meet the target for phase two of 0.75W, which was set in the European Commission Code of Conduct on Efficiency of External Power Supplies.



(TLF-204-85)

### PB-free Solder Pastes

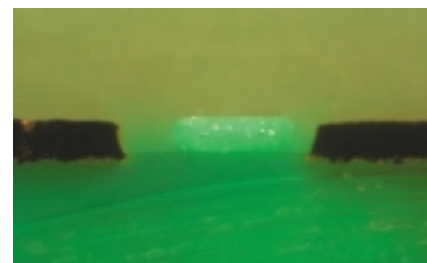
These environment conscious, Pb-free solder pastes for general surface soldering prevent the "tombstone effect" of chip components by using a special synthetic-resin and are well compatible with high-temperature reflow profiles because of their improved heat resistance. These solder pastes can also reduce the formation of side balls, and display excellent stability in storage and in continuous printing.



(EC-19S-8)

### Postflux for Pb-free Soldering

This environment conscious postflux for high-reliability, Pb-free dip soldering retains high residue reliability, while offering excellent throughput hole even with low preheat temperatures and good wetting by improving its heat resistance.



(DSR-330S-12-13)

### Halogen-free Liquid Solder Resist

This alkaline-developable, liquid photo-imageable solder resist has high resolution and is suitable for electroless gold plating. This product contains 300ppm of halogen, which is 88% less than that of our conventional products.

## Green Procurement

Tamura Corporation strives to supply products that not only are quality and cost competitive but also cause less environmental impacts, working in cooperation with its business partners and affiliated companies.

### Green Procurement

Tamura Corporation is committed to minimizing the environmental impacts arising from manufacturing activities that include those at its business partners and assembling and manufacturing companies, thereby further 'greening' our products. In doing so, we conduct a questionnaire survey every year of our major 197 suppliers to check their compliance with applicable environmental laws and regulations and their environmental protection activities.

### Controlled Chemicals

Tamura Corporation is working hard to phase out or cut down the use of chemicals shown on the list of controlled chemicals as "Tamura controlled chemicals". Controlled chemicals are those that are regulated in Japan and overseas (through the EU RoHS Directive, the US Toxic Substances Control Act, and US California Proposition 65, for instance) or those that are incompatible with eco-labeling programs' requirements.

### Tamura controlled chemicals

Classification	Substance name
Heavy metal	Cadmium and its compounds
	Lead and its compounds
	Mercury and its compounds
	Chromium(VI) compounds
Organic chlorine compounds	Polychlorobiphenyls (PCBs)
	Polychlorinated naphthalenes (PCNs)
	Chlorinated paraffins (CPs)
	Mirex
	Other organic chlorine compounds
Organic bromine compounds	Polybrominated biphenyls (PBBs)
	Polybrominated diphenyl ethers (PBDEs)
	Other organic bromine compounds
Other	Organic tin compounds (tributyltin compounds, triphenyltin compounds)
	Asbestos
	Azo compounds
	Formaldehyde
	Polyvinylchloride (PVC) and polyvinylchloride mixture

### Green Procurement Criteria

- (1)The Tamura Group's environmental protection activities
- (2)The Tamura Group's policies on green procurement
- (3)Request for answers to questionnaire
- (4)Criteria for the restriction of the use of "Tamura controlled chemicals"
- (5)Agreement on specifications

## Environmental Risk Management

Tamura Corporation takes all possible measures to ensure environmental protection in compliance with environmental laws and regulations by installing facilities for environmental protection at all of our business establishments.

### Prevention of Pollution

Different types of facilities for environmental protection are installed at Tamura's factories. Wastewater treatment facilities (left) remove lead-compounds by a coagulation process



Wastewater treatment facilities

and organic solvent recovery systems (right) remove solvent in the exhaust air in a catalytic adsorption process.

### Control of Chemical Substances

As part of its effort to control chemical



Coagulation process and organic solvent recovery systems

substances, Tamura set up a register of chemical substances to record the amount of chemicals purchased, stocked, used and released/transferred. We have also established a system to manage the amount of chemical substances contained in parts and materials we purchase.

### Complaints, Litigation and Accidents

Tamura Corporation did not receive any complaints about air/water pollution, soil contamination, groundwater pollution and land subsidence, was not fined for breaching environmental regulations and caused no accidents.

## Environmental Management System

Tamura Corporation has been developing an environmental management system as part of the promotion of our environmental protection activities. We also enhance group-wide environmental management.

Tokyo Factory and Saitama Factory currently operate an environmental management system and the system will be introduced to domestic affiliated companies. The Tamura Group, whose mission statement includes the protection of the global environment, actively promote environmental protection activities, such as obtaining ISO14001 certification, at overseas production bases. Six of our overseas affiliated companies have already obtained ISO 14001 certification.

### Environmental protection activities at TAMURA ELECTRONICS MALAYSIA

At TAMURA ELECTRONICS MALAYSIA, we are promoting, among others, the reduction of chemicals consumption and the minimization of waste generation, in order to help achieve an environmentally healthy society. For example, the volume of waste pallets has decreased by 3 to 4% from over 2001, through reusing used pallets

### ISO14001 Certification List

Certified Operations	Date of Certification	
Domestic		
TAMURA CORPORATION (TOKYO FACTORY, SAITAMA FACTORY)	March 2000	
TAMURA KAKEN CORPORATION	September 2003	
WAKAYANAGI TAMURA CORPORATION	scheduled for November 2003	
TAMURA FA SYSTEM CORPORATION	scheduled for March 2004	
TAMURA SEIKO CORPORATION	scheduled for December 2003	
GUNMA TAMURA CORPORATION	scheduled for March 2004	
AIZU TAMURA CORPORATION	scheduled for December 2003	
TOHOKU TAMURA CORPORATION	scheduled for March 2004	
International		
TAMURA HINCHLEY LTD.	ENGLAND	September 2000
TAMURA KAKEN(U.K.) LTD.	ENGLAND	July 2003
TA FONG ELECTRO CHEMICAL INDUSTRY CO., LTD.	TAIWAN	September 1998
SHANGHAI XIANG-LE TAMURA ELECRO CHEMICAL INDUSTRY CO., LTD.	CHINA	September 1998
TAMURA KAKEN SINGAPORE PTE., LTD.	SINGAPORE	October 1999
TAMURA ELECTRONICS(M) SDN. BHD.	MALAYSIA	September 2001
TAMURA ELECTRONICS(H.K.) CO., LTD.	CHINA	scheduled for October 2003
TAMURA ELECTRONICS(S.Z) CO., LTD.	CHINA	scheduled for October 2003
DONG-HWA TAMURA KAKEN CO., LTD.	KOREA	scheduled for March 2004

internally. We are also confident that we have become more environmentally conscious after we obtained ISO14001 certification. Every one of us is trying to save energy, for example, by

switching off lights and air-conditioners during lunchtime.

Sharifah Azura  
TAMURA ELECTRONICS MALAYSIA



## Environmental Accounting

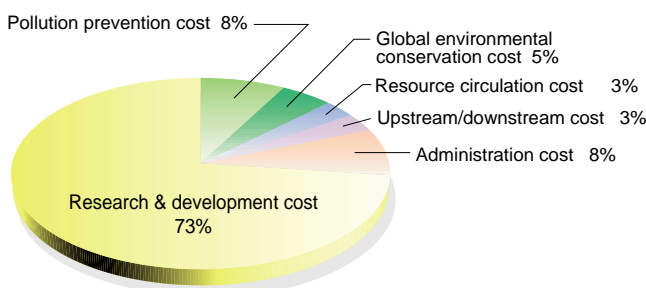
Tamura introduced an environmental accounting system in the FY 2002 in order to promote more efficient and effective environmental protection activities as well as to pursue better disclosure of its environmental information.

For the first year, we compiled environmental accounting data for Tokyo factory and Saitama factory, drawing upon "Environmental Accounting Guidelines 2002", published by Japan's Ministry of the Environment.

For the FY 2002, the investment amount was 12 million yen and the expenditure amount was 282 million yen. Of the total expenditure amount, 73% was research and development cost. This reflects the fact that

Tamura, which develops products such as circuit boards materials and soldering materials and equipment, had to allocate resources into research and development for lead-free soldering technologies.

### Environmental Protection Expenditure in the FY2002.



Pollution prevention cost	Cost associated with the prevention of air/water pollution, soil contamination and odor
Global environmental conservation cost	Cost associated with the prevention of global warming
Resource circulation cost	Cost associated with the efficient use of water and waste management, etc
Upstream/downstream cost	Cost associated with the collection and proper disposal of containers and packaging and the assessment of chemicals in products
Administration cost	Cost associated with the implementation of an environmental management system, employees training on environmental issues, environmental information disclosure and planting of Greenery and beautification
Research & development cost	Cost associated with the development of Pb-free soldering technologies and environmentally conscious products

8 TAMURA KAKEN SINGAPORE  
PTE., LTD.  
ISO14001 Certified

10 TAMURA HINCHLEY LTD.  
ISO14001 Certified  
ISO9001 Certified

6 TAMURA ELECTRONICS (H.K). CO., LTD.

**For inquiries about the report, contact:**

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