



Tokyo Seimitsu Co., Ltd.
Environmental Report
2004

PROFILE



Since our foundation in 1949, we at Tokyo Seimitsu have been developing products that help our customers improve their productivity. At the same time, we have striven to enhance customer support for our precision measuring systems and semiconductor manufacturing equipment. Our products proudly bear the ACCRETECH brand, a name derived from the words “accrete” and “technology.” The name expresses our desire to grow with partners and customers by accumulating the knowledge needed to create the world’s number-one products.

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Editorial Policy

The “Environmental Report Guidelines (Fiscal 2000 Edition)” was used as a reference in preparing this report. Fiscal 2003 programs are discussed in this Fiscal 2004 edition of the Environmental Report. The report will be issued annually.

[Scope of this report]

Time period: April 1, 2003 – March 31, 2004

Organizations covered: Semiconductor Company (Hachioji City, Tokyo), Metrology Company (Tsuchiura City, Ibaraki), Administration Company (Mitaka City, Tokyo)

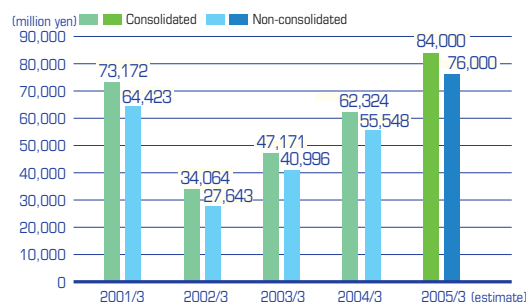
Environmental Report 2004

Company Overview

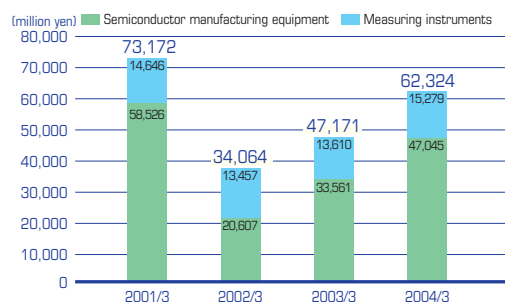
Company name:	Tokyo Seimitsu Co., Ltd.
Head Office:	9-7-1, Shimorenjaku, Mitaka City, Tokyo 181-8515, Japan
Established:	March 28, 1949
Paid-in capital:	7,199.9 million yen (as of March 31, 2004)
Net Sales: (consolidated)	62.3 billion yen (in fiscal 2004)
Number of employees: (consolidated)	1,101 (as of March 31, 2004)
Primary products:	<p>Semiconductor manufacturing equipment: Wafer probing machines, wafer dicing machines, wafer inspection systems, polish grinders, chemical mechanical planarizers (CMP), lithography systems and wafer manufacturing systems</p> <p>Measuring instruments: Coordinate measuring machines, surface texture and contour measuring instruments, cylindrical form measuring instruments, optical communication component measuring instruments and machine control gauges</p>



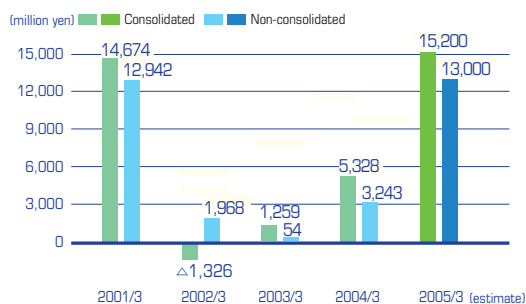
Net Sales



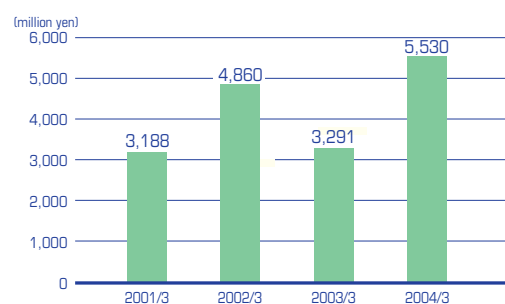
Net Sales (by business)



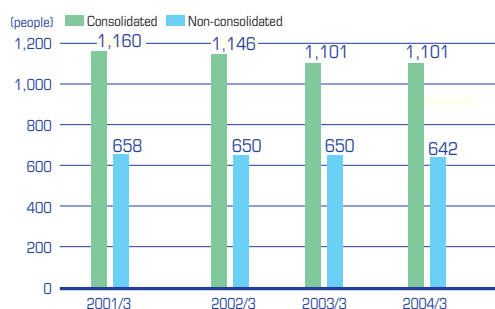
Ordinary income



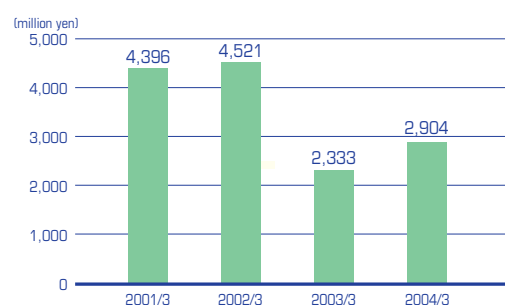
R&D expenses



Number of employees



Capital expenditures



Message from the Management



Chairman and CEO

Hideo Otsubo

ACCRETECH technologies and products that consistently outshine the competition in the fields of semiconductor manufacturing equipment and measuring instruments, giving the company a secure position in the industry. Based on the Strategic Principles for Our R&D, ACCRETECH tirelessly launches world-class products in these fields, which have high technical barriers to entry and a large market. This has enabled us to build up a business foundation of strong growth and high profit.

We believe that there is more to achieving long-term corporate growth than providing safe products and services, although safety is a non-negotiable priority. It is crucial that companies also fulfill their social responsibilities through environmental protection activities and the promotion of corporate ethics.

ACCRETECH established its basic philosophy governing environmental protection activities in 1997, which states, "Recognizing the fact that environmental protection is a critical issue to people worldwide, ACCRETECH makes every effort to ensure that environmental considerations are reflected in all its development, design, manufacturing and service activities." In accordance with this philosophy, all employees strive to conduct activities from development and production to services in a wide array of business areas with sensitivity to the environment. We do everything we can to minimize environmental impact.

We have established an Environmental Management Committee to ensure that the company lives up to our basic philosophy. The committee promotes thorough environmental protection activities. In fiscal 2003, we began developing a laser dicer, the **MAHODICING MACHINE ML200/300**, which will be launched soon. This innovative machine is environmentally friendly, with 90% less energy consumption than the conventional models, and requires no disposal of cutting effluent.

Green procurement is an area of particular interest to us. We have formulated the "ACCRETECH Green Procurement Guidelines" and solicited the cooperation of suppliers. Our environmental protection efforts are in accordance with these guidelines.

This year at ACCRETECH, we have decided to publish the company's first environmental report to ensure that the public is better acquainted with our environmental activities. As we continue to reduce environmental impact, we ask for your continued support.



President and COO

Sadakatsu Suzuki

Environmental Philosophy

Corporate Motto on the Environment

Win-win relationships create the world's No. 1 products
Working in harmony with the natural environment

Basic Environmental Philosophy

Recognizing the fact that environmental protection is a critical issue to people worldwide, ACCRETECH makes every effort to ensure that environmental considerations are reflected in all its development, design, manufacturing and service activities.

Basic Environmental Policy

All ACCRETECH employees strive to ensure that business activities—primarily the production and servicing of semiconductor manufacturing equipment and measuring instruments—are conducted with sensitivity to the environment, and do everything they can to minimize environmental impact.

Environmental Action Guidelines

1. An environmental management system, under the responsibility of the Environmental Management Committee, shall help the entire organization to be centrally involved in promoting dedicated environmental conservation programs.
2. We shall comply with environmental legislation, regulations and agreements as well as the company's internal policies, setting independent objectives in our efforts to prevent pollution and conserve the environment.
3. We shall develop and upgrade environmentally friendly products (products that conserve energy, conserve resources and eliminate the use of harmful substances).
4. We shall set environmental goals and environmental targets for the measures outlined below related to the environmental impact caused by business activities, ensure the continuity of the programs, and utilize internal audits to identify areas requiring revisions.
 - ◆ Lower consumption of energy and resources; reduction in waste materials generated and promotion of recycling; more effective use of natural resources
 - ◆ Proper management of pollutants, preventing of pollution caused by these substances, switching to more environmentally compatible substances and reducing the amount of pollutants used
 - ◆ New product development and improvement of existing products to reduce energy consumption, use of fewer resources, elimination of the need for polluting substances and otherwise lessening the environmental impact of products
5. We shall provide all employees with environmental training programs and raise awareness, and gain understanding and cooperation with our environmental protection activities from our suppliers.
6. We shall publicize these environmental guidelines both within and outside the company.

Revised February 23, 2004

ACCRETECH's Business Fields and Environmental Impact

ACCRETECH provides superior products and services in the fields of semiconductor manufacturing equipment and measuring instruments. In addition, the company actively strives to conserve resources and energy and recycle in all business activities, and also works to reduce environmental impact.

Business Fields

Semiconductor manufacturing equipment

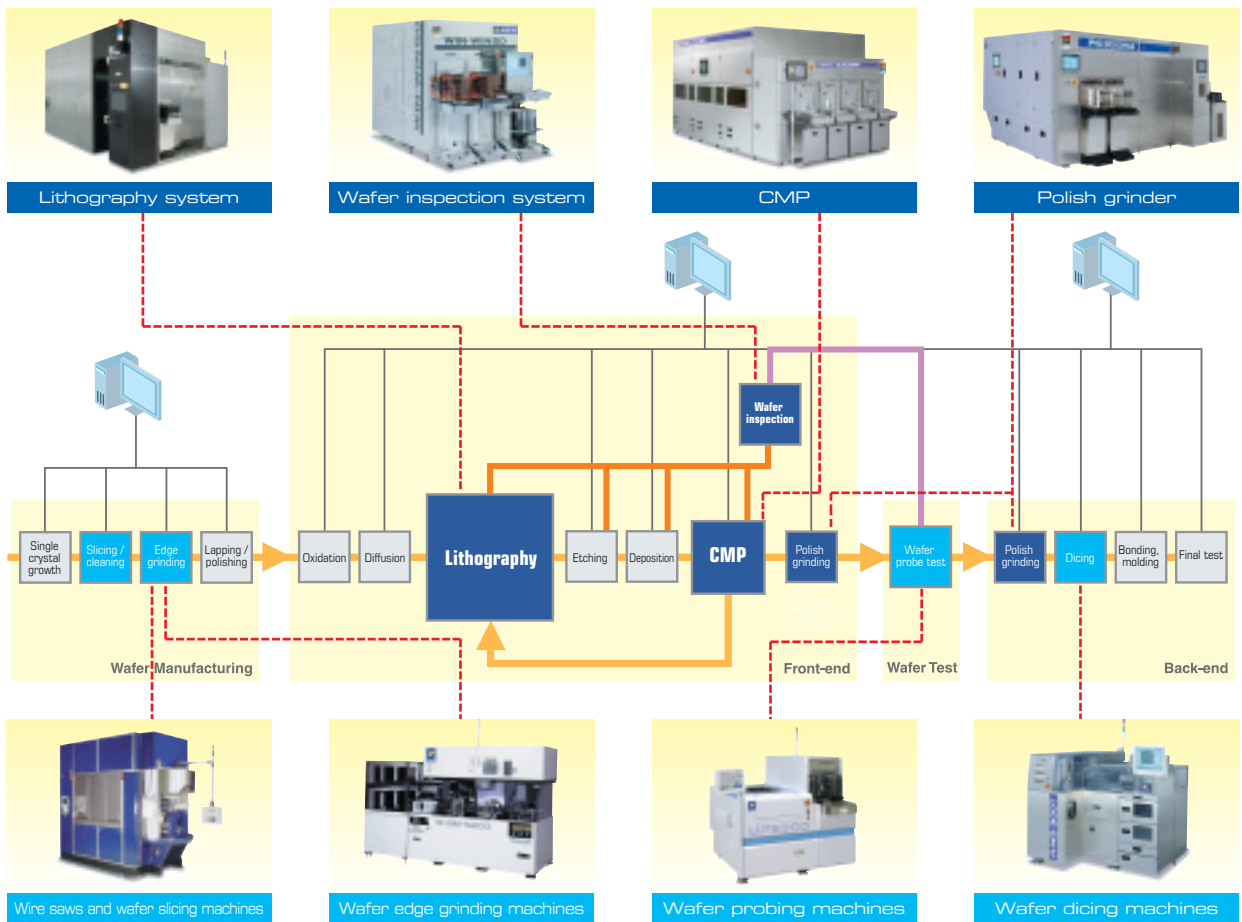
The semiconductor manufacturing process consists of wafer manufacturing by the wafer manufacturer, the front-end process involving semiconductor device production by the semiconductor manufacturer, the wafer test process, and the back-end process. ACCRETECH manufactures and sells equipment that is integral to each of these processes.

The company's lithography system prints intricate circuit patterns on wafers, the most crucial element of front-end semiconductor processes.

Wafer inspection systems detect pattern defects, contaminants and other problems on wafer surfaces.

CMPs remove unevenness on wafer surfaces that occurs during production processes. Applications are growing due to the increasing number of layers in semiconductor devices and growing variety of wiring materials.

Polish grinders simultaneously grind wafer backs and remove damaged layers to produce thin yet highly rigid wafers.



Wire saws and wafer slicing machines cut silicon crystal ingots into silicon substrates called wafers, upon which semiconductor processing is conducted.



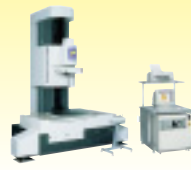


Wafer edge grinding machines chamfer the edges of the wafers.

Wafer probing machines test the electric characteristics of each chip created on a wafer. The test is conducted by a probe of the probe card, attached to a wafer prober and connected to a tester.

Wafer dicing machines separate chips created on wafers into individual chips.

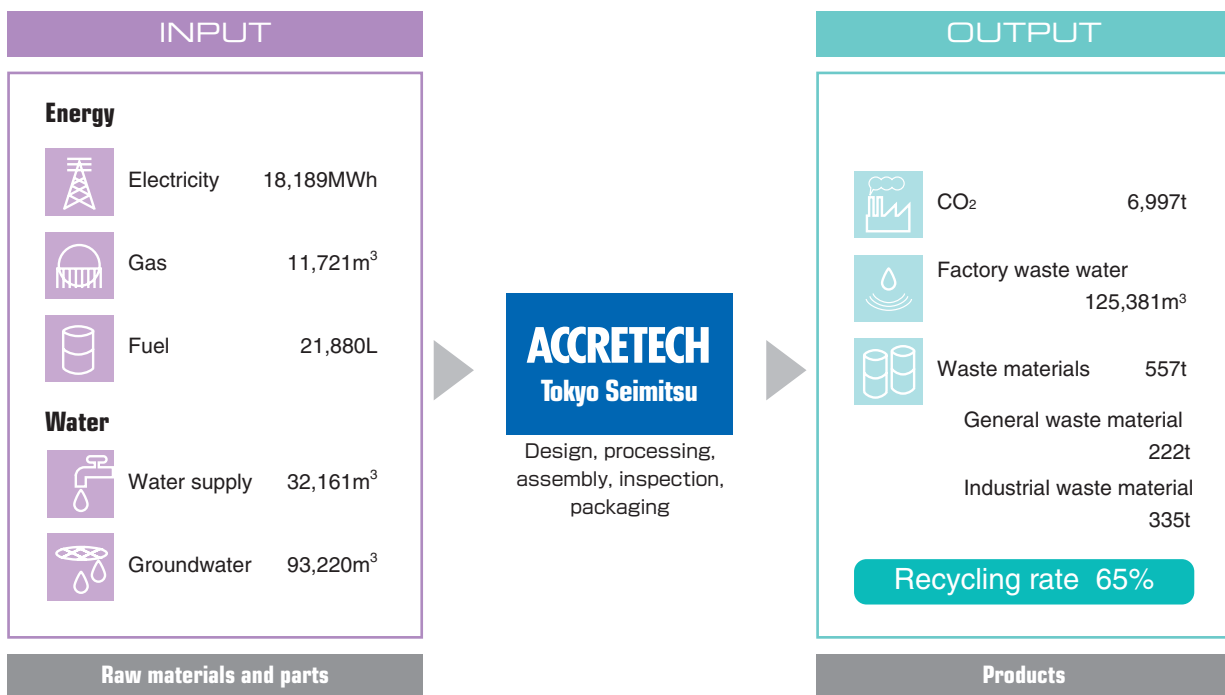
Measuring instruments

Measuring instruments can be classified into two types: multipurpose measuring instruments and automatic measuring instruments.

Multipurpose measuring instruments				Automatic measuring instruments
				
Coordinate measuring machines	Surface texture and contour measuring instruments	Cylindrical form measuring instruments	Optical communication component measuring instruments	Machine control gauges
Coordinate measuring machines measure molds and automobile parts with highly precise scanning and high throughput in response to the need for higher precision of parts.	Surface texture and contour measuring instruments measure the surface texture and contour in an integrated manner.	Cylindrical form measuring instruments are used to measure automobile engine components and other parts.	Optical communication component measuring instruments are automatic measuring instruments that measure optical fiber connectors.	Machine control gauges control machine tools in real time.

ACCRETECH and Environmental Impact

By their very nature, ACCRETECH's businesses in semiconductor manufacturing equipment and measuring instruments consume energy in the form of electricity and use water in cooling and air conditioning. The company is aware of the resulting environmental impact and strives to reduce it.



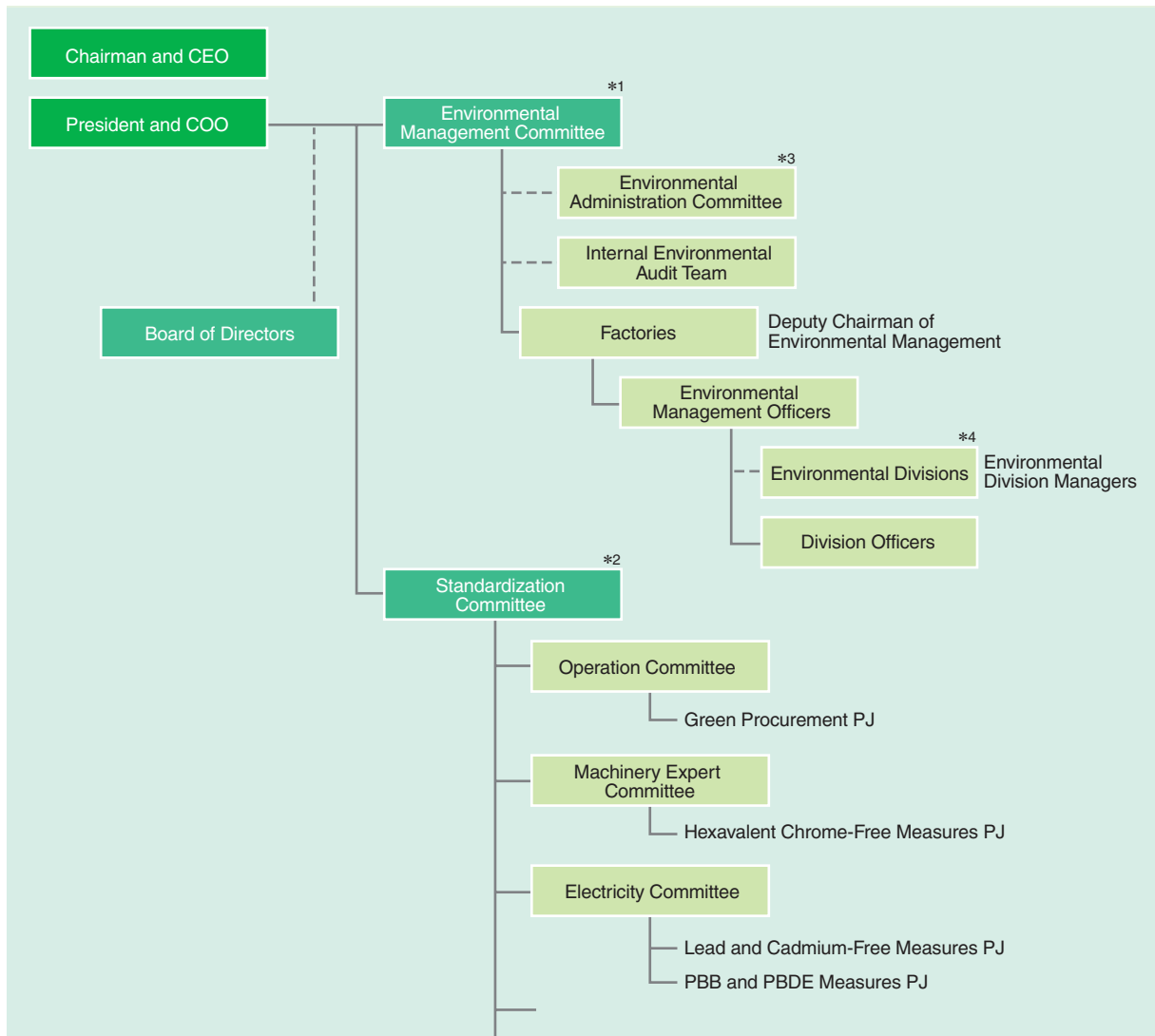
(2003/4~2004/3)

Environmental Management System

Environmental Management System

ACCRETECH established the internal Environmental Management Committee to ensure the continuity of environmental protection activities based on the Tokyo Seimitsu Environmental Philosophy. The activities are conducted in accordance with the ISO14001 management system.

Organizational Chart of Environmental Management System



Role of Committees

- *1) Environmental Management Committee
This organization discusses and promotes environmental management activities. It is comprised of the environmental management committee chairman, the deputy chairman, environmental management officers (one per site) and several representatives from the implementing organizations.
- *2) Standardization Committee
The committee promotes the preparation and use of the necessary standards and criteria for environmental and quality management.
- *3) Environmental Administration Committee
The Committee is formed of several members from each site (including environmental management officers) and performs the following roles:
 1. Operates the environmental management system
 2. Prepares drafts of environmental guidelines and environmental management manual
 3. Prepares materials for the Environmental Management Committee
 4. Prepares and processes proposed measures for issues related to other sites
- *4) Environmental Division
Environmental divisions are set up at each site and promote specific efforts to achieve the sites' environmental goals.

Environmental Protection Activities and Environmental Education

Internal Environmental Audits

Internal environmental audits are conducted to ensure that activities are consistent with environmental goals and objectives and to make necessary revisions. These audits are held in all areas in the spring and for targeted areas in the fall. An audit team put together by 2-3 team members with lead auditor credentials use an audit checklist prepared by the committees to conduct the audit.



Internal environmental audit

Employee Environmental Education and Briefings for Suppliers

Data on electricity, water and waste materials are posted in the form of environmental graphs at all sites for employees. Articles on environmental topics, revised legislation and other issues are regularly distributed by e-mail. Workshops are held once a year for internal auditors on environmental manuals, related regulations and environmental legislation and audit techniques. The ACCRETECH Green Procurement Guidelines were formulated and presented at a briefing for suppliers in August 2003. This briefing was an opportunity to explain green procurement, discuss the ways that defective products waste labor, resources and energy, and improved understanding of the company's environmental programs.



Suppliers' briefing

Accident Reports and Emergency Scenario Training

Accident reports

There were no accidents affecting the environment in fiscal 2003.

Emergency Scenario Training

Emergency scenario training is given every year to prevent accidents.

1. In fiscal 2003, the two scenarios below were used to practice for the eventuality of accidents involving high-risk waste water treatment equipment. In addition to confirming the procedures for emergency disposal, the training also involved blocking off entrances to surrounding areas and handling the treated water.
 - ◆ Scenario in which hydrochloric acid spills inside the pit due to problems with the seal on the hydrochloric acid storage tank.
 - ◆ Scenario in which hydrochloric acid leaks onto the road from the tank lorry while the hydrochloric acid storage tank is being refilled from the tank lorry.
2. The scenario described below was assumed for the warehouse used to store hazardous materials, and employees were trained in preventing fires and preventing spilled oil from spreading.
 - ◆ Scenario in which a large amount of lubricating oil spills when being moved from a drum to an 18 liter can.



Training



Environmental Objectives and Achievements

Environmental Objectives and Achievements

Area	Issues	Fiscal 2003 achievements	Fiscal 2004-2006 objectives
Eco factory	Electricity use	18,190,000kWh (calculated as if production were identical to fiscal 2000 level)	Cut electricity use by 10% of fiscal 2003 levels by the end of fiscal 2006 *1
	Use of water resources	125,831m ³ (calculated as if production were identical to fiscal 2000 level)	Cut total of water supply and groundwater use by 10% of fiscal 2003 levels by the end of fiscal 2006*1
	Waste materials measures	Scrap metal reduced by 6 tons Waste plastic reduced by 2 tons (calculated as if production were identical to fiscal 2000 level)	Raise recycling rate for waste materials to levels over 95% by the end of fiscal 2006
	Amount of paper purchased	54,700kg (calculated as if production were identical to fiscal 2000 level)	Cut total amount of paper purchased by 10% of fiscal 2003 levels by the end of fiscal 2006
Eco products	Shift to lead-free production	Technology review currently in progress as part of lead-free project	Starting in 2006, basically prohibit the use of hazardous chemical substances such as the three materials listed to the left in new products to which internal standards (TES A-C600) apply. We are aiming to make all products free of hexavalent chromium.
	Shift to hexavalent chromium-free production	Technology review currently in progress in Machinery Standardization Committee	
	Shift to mercury-free production	Technology review currently in progress in Electric Standardization Committee	
	Promotion of green procurement	Started in May 2004	Raise green procurement rate to levels over 80% (as a percentage of the total number of parts)
Eco mindset	Employee training	Regular training for internal auditors Training on environmental problems for general employees	1. Train internal auditors and increase their numbers 2. Upgrade employee environmental education
	Participation in social action programs	1. Clean-up of nearby parks 2. Start of adopt-a-road program in Hachioji (January 2004)	1. Offer factory tours 2. Participate in programs of external groups
	Environmental report, environmental accounting	First environmental report issued in September 2004	Enhance environmental reports and environmental accounting

Note * 1: This does not include the increase resulting from greater production. The company's production is heavily affected by economic conditions in the semiconductor industry and the environmental impact fluctuates significantly in response.

■ Environmental protection costs

Fiscal 2003 (unit: 1,000 yen)

Category	Primary measures	Amount invested in environmental infrastructure	Costs
(1) Business area costs		57,839	127,251
① Pollution prevention costs	Maintenance of water treatment facilities, noise measurement	2,400	84,354
② Global environmental costs	Renovations to energy conservation facilities, maintenance and management of equipment, appropriate disposal of refrigerant New construction of facilities for waste water recycling	54,701	21,497
③ Resource circulation costs	Recycling of waste plastic, waste materials and used paper; appropriate disposal of waste effluent, noncombustible materials, paper scrap and food scraps	738	21,399
(2) Upstream and downstream costs	Preparation of green procurement guidelines	—	1,500
(3) Management program costs	Conference transportation costs, internal audits, education for on-site employees, on-site cleaning, pruning of trees within grounds Maintenance of ISO14001 certification	—	11,479
(4) R&D costs	Development of laser dicer, improvements to polish grinder that uses less purified water	—	54,491
(5) Social activity costs	Clean-up of areas around parks	—	79
(6) Environmental damage costs		—	—
Total		115,678	322,050

○ There are additional environmental protection costs that do not fit into the above categories (1) – (6); when including these costs into “(7) Other costs,” a description and reasons will be listed so that the scope of this category is clear.

Fiscal 2003 (Unit: 1,000 yen)

Item	Description	Amount
Total investment costs during relevant period		57,839
Total R&D costs during relevant period		54,491
Amount gained on sale of saleable objects related to (1) ③	Metal scrap, electrical wire scraps, waste substrate, waste cardboard	347
Amount gained on sale of saleable objects related to (2)		—

■ Environmental Protection Results

Cuts in electrical power	502,000kWh
Cuts in CO ₂	190t
Recycling of waste materials	297t
Recycling of general waste	81t
Recycling of industrial waste	216t

■ Environmental Accounting Policies

1. Period covered: April 1, 2003 – March 31, 2004
2. Scope of data collection: ACCRETECH's main three business facilities (Hachioji Plant, Tsuchiura Plant, Mitaka Head Office)
3. Method for collecting data:

- (a) Environmental protection costs and other compound costs are calculated ① based on the difference remaining after subtracting non-environmental protection costs, and with those costs for which the difference cannot be calculated, ② only the portion deemed to apply to environmental protection are counted.
- (b) The average service life of the capital investment is set at a standard five years for calculating depreciation costs.

$$\text{Depreciation costs} = \frac{\text{Capital investment amount}}{\text{average service life (5 years)}}$$

- (c) Personnel costs are calculated by multiplying the man-hours related to environmental protection and the unit cost.
- (d) Since this is the first fiscal year the report is issued, the economic effect is not expressed as a specific indicator. These calculations will be done from next year's report.

Product Safety

ACCRETECH is responsible for ensuring the safety of the products used by its customers. In order to prevent accidents caused by the products, the company designs and manufactures its products in accordance with various guidelines that give detailed attention to product safety issues.

Example of guidelines

- ① SEMI S2-0200: Environmental, health and safety (EHS) guidelines for semiconductor manufacturing equipment formulated by Semiconductor Equipment Manufacturing International (an organization of manufacturers of semiconductors, FPD manufacturing equipment and materials). The guidelines were approved by the Global Environment, Health and Safety Committee.
- ② CE Marking Directive: These safety regulations are used for products for EU markets. Of the 21 types of directives, the Machinery Directive, Electromagnetic Compatibility Directive and Low Voltage Directive apply to ACCRETECH products.

Environment-Friendly Products

ACCRETECH's mission is to help conserve the environment through its superior environmentally friendly products. The new laser dicing machine uses 90% less electricity than the conventional model and the energy consumption and cost of processing the cutting effluent has also been reduced.

■ Laser dicing machine, MAHODICING MACHINE ML200/300

Conventional blade dicing machines process silicon wafers by using a high-speed spindle that rotates the blade about 50 krpm and issuing purified water as the grinding fluid. On average, this model consumes an average 4.0 kVA in electricity and uses about 12 liters of highly purified water every minute.

The new laser dicing machine focuses the laser on the inside section of the silicon wafer. This selectively forms a modifying layer by irradiating the laser on the inside section of the silicon wafer, which causes the modifying layer to grow vertically, creating die separation with no chipping. This makes purified water unnecessary and pushes electricity consumption down to a low 1.92 kWh. Compared to blade dicing, this new dicing machine cuts the throughput time down to one-fourth of its previous time. Accordingly, processing the same amount of wafers as in a blade dicing machine would only consume 0.48 kWh in electricity (one-fourth of 1.92 kWh), reducing electricity consumption by 85%. Considering the electricity used in producing purified water, the total electricity reduction reaches 90%. The new machine also leads to reductions in the energy and costs involved in processing the cutting effluent.



	Blade Dicing A-WD-200T/300T	Laser Dicing ML200/300		Rate of decrease
			Energy consumption factoring in throughput	
Energy consumption (200V)	3.2kWh	1.92kWh	0.48kWh	85%
Highly purified water consumption	12liters/minute	—	—	100%
Electricity conversion (reference)	0.028kw/minute	—	—	—
Total comparison (per hour)	4.87kWh	1.92kWh	0.48kWh	90%

Green Procurement

Green Procurement

Companies make choices when procuring parts, processing and assembling. In addition to the usual criteria of quality, cost and delivery time, companies supporting green procurement prioritize materials with low environmental impact from suppliers involved in environmental activities. This contributes to environmental conservation.

When starting these activities, Tokyo Semitsu distributed its ACCRETECH Green Procurement Guidelines, which express ACCRETECH's thinking on green procurement, to all suppliers in March 2003. Subsequently, the company conducted a survey on the potentially harmful substances found in its products and prepared the Green Procurement Administration Standards. These standards stipulated the substances that could not be included in products and the criteria regulating them. The evaluation based on these standards was completed by April 2004, and operations started in May.

System for Environmental Protection Activities

ACCRETECH uses external companies to process its parts. Its interest in producing "green products" makes the company very concerned about the environmental protection systems of external suppliers.

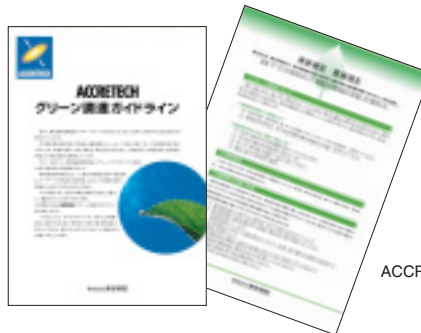
The company believes that it is extremely important to consider the environment when manufacturing the parts to be used in its products.

Accordingly, the ACCRETECH Green Procurement Guidelines and Green Procurement Administration Standards require that suppliers obtain ISO 14001 certification or use ISO 14001 as a reference in creating an environmental management system. The company surveyed the environmental management systems and inclusion and use of harmful chemical substances among external suppliers. This survey will help us raise the green procurement ratio by fiscal 2006.

Purchasing of Materials with Low Environmental Impact

Suppliers are required to follow the measures outlined below to reduce the environmental impact of materials purchased.

- (1) Compliance with environmental legislation
- (2) Management of chemical substances
- (3) Exclusion of harmful substances from procured products or reduction in their use
- (4) Resource conservation
- (5) Energy conservation
- (6) Efforts to reduce packaging
- (7) Efforts to reduce waste materials and to recycle



ACCRETECH Green Procurement Guidelines



Supplier briefing

Green Purchasing

Beginning in fiscal 2002 ACCRETECH began practicing green purchasing, ensuring that the office supplies, office equipment and appliances it purchases have low environmental impact. The organizations in charge of making these purchases were integrated to ensure thoroughgoing green purchasing.



Energy Conservation

Electricity use is increasing as businesses expand. One of our environmental protection activities involved reviewing and then implementing methods to reduce electricity consumption by 5% of fiscal 2000 levels in the Semiconductor Company and by 10% in the Metrology Company by the end of fiscal 2003. Measures to reduce these amounts were implemented every year. As a result, electricity use was cut by 500,000 kWh.

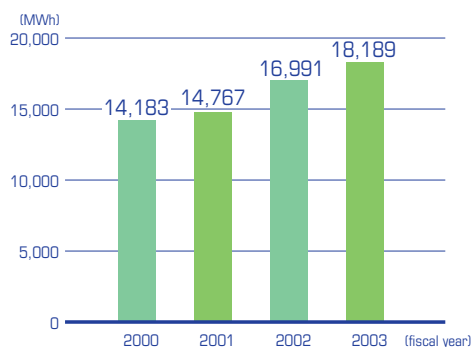
Main Reduction Measures

- ① Conversion of light fixtures to energy conserving types
- ② Upgrade equipment such as air conditioners and compressors to energy conservation types
- ③ Campaign to turn lights off where not needed and efforts to turn office equipment off during non-working hours
- ④ Revisions to production process and reductions in electricity used in production
- ⑤ Intermittent operation of water purification equipment
- ⑥ Shutdown of surplus air conditioners by consolidating rooms

Reductions Achieved

502MWh

Trends in Energy Use



Chemical Substances Management

Specified Chemical Substances

Two of the chemical substances that the company uses are specified in Japan's Pollutant Release and Transfer Register (PRTR) Law, but the company is not required to submit notification since its use of these substances is less than 1 ton. These specified chemical substances are primarily used in the process of manufacturing the linear scale in the Metrology Company and for test cutting products in the Semiconductor Company.

The Semiconductor Company also handles four substances designated as requiring special management in the Ordinance on Environmental Preservation of the Tokyo Metropolitan Government.

Chemical Substances Management

Internal company regulations designate the substances with the potential to pollute the environment. When these substances are used, an environmental management officer must be notified. The amount of each substance used, the storage location and the maximum storage amount are identified, and training is offered regularly in the use of MSDS*1 and in preparing emergency planning tools in case of unforeseen events.

* 1) Material Safety Data Sheets (MSDS) are also referred to as "chemical substance safety data sheets" and "product safety data sheets." Information on the name of the chemical substance, the company manufacturing the substance, the laws on its handling, its hazardous nature and type of toxicity, its solid state properties, effect on the environment, safety measures, emergency response and countermeasures in an emergency are recorded on this sheet for each chemical substance. The PRTR Law requires that companies such as manufacturers compile data on the amount of chemical substances discharged and the amount of waste materials transferred to be reported to the national government via local governments. The MSDS must also be attached to this report.

Substances specified in PRTR Law

Name of substance	Amount handled	Plant using
Hydrofluoric acid	650kg	Semiconductor Company
Dichloromethane	730kg	Metrology Company

Substances designated as requiring special management in the Ordinance on Environmental Preservation of the Tokyo Metropolitan Government

Name of substance	Amount handled
Isopropyl Alcohol	9liters
Acetone	112liters
Hydrochloric acid	3,642liters
Hydrofluoric acid	650kg

Reductions in Waste

In addition to the thorough internal measures to reduce waste materials, we also request external cooperation with such measures. In fiscal 2003, waste materials decreased as described below.

Primary Reduction Measures

① Metal Scraps

- Sale of iron, aluminum and stainless steel scraps as saleable materials
- Revisions to technical drawings to minimize cutting stock
- Shift to cast metal and lost wax

Reductions Achieved **6tons**

② Waste Plastic

- Request cooperation from suppliers in using less packaging and returnable containers
- Melt down materials for recycling (Semiconductor Company)
Thermal recycling
→ Substitute for fossil fuels (Metrology Company)

Reductions Achieved **2tons**



③ Polluted Sludge

- Waste water treatment facilities, revisions to system
- Disposal through landfill → Reuse of backfill materials

Reductions Achieved **20m³**

④ Paper and Lumber

- Use both sides of internal documents
- Request customers' cooperation in using less packaging and returnable containers
- Sell old paper and cardboard materials as saleable objects
- Reuse lumber (excluding plywood) as chips



⑤ Discarded Electrical Materials

- Sell electrical wire scraps, substrate scraps and decommission office equipment as saleable objects

⑥ Unsorted Noncombustible Waste

- Salvage recycled products by thorough sorted collection
- Improvements to boxes for collection of waste materials and collection methods

Reductions Achieved **10.2tons**

Resource Conservation

Service Water Management

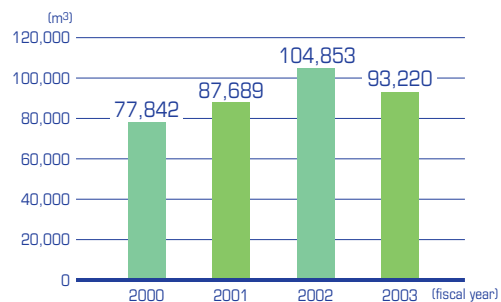
Service water comes primarily from groundwater. The amount of groundwater discharged has increased as business has expanded, but the company is taking the measures below to control further increases.

- ① Change the conductivity control value of the cooling tower's supplementary feed and reduce use of well water (Semiconductor Company)
- ② Reduce use of well water through intermittent operation of water purification facilities (Semiconductor Company)
- ③ Change chiller cooling water from effluent method to recirculation method (Semiconductor Company)
- ④ Change air conditioners from chiller method to electric method (Metrology Company)



Cooling water recirculation system

Trends in Use of Groundwater

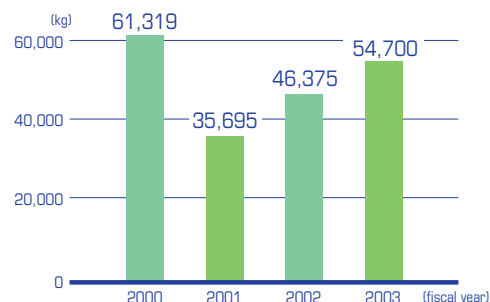


Resource Conservation in Offices

Half of the paper purchased for office copy paper and computer forms is standard A4 paper, with the rest being standard A3 paper, A4 and A3 clean paper, rolled paper (for technical drafts) and computer forms. The measures outlined below were adopted to reduce paper use.

- ① Use of backside of paper for copying documents for internal use
- ② Both-side copying or use of scale-down function when copying documents for internal use
- ③ Restraint in printing e-mails
- ④ Reductions in number of technical drafts distributed
- ⑤ Reductions in technical drafts by entrusting external suppliers with technical drafts
- ⑥ Providing product manuals in the form of CD-ROMs

Trends in Paper Use



Local Action Programs

Local Beautification Program (Metrology Company)

Once a month, the Metrology Company helps to clean the neighboring Higashi-Nakanuki Park jointly with ten nearby companies.

This park is the only city park near the Metrology Company, which is located within the Nakanuki Industrial Complex in Tsuchiura City, Ibaraki. Illegal dumping of garbage is a serious problem for the park; at one time, even cars were abandoned there. However, entreaties to neighboring companies using the park resulted in two years of clean-ups that have restored the park to its original function.



Weeding and clean-up activities in Higashi-Nakanuki Park

Adopt-a-Road Program (Semiconductor Company)

The Semiconductor Company came to an agreement with Hachioji City in January 2004 to enter the Hachioji Adopt-a-Road Program*1. The facility adopted the roundabout on the east side of the JR Kita-Hachioji Station, used by many employees. Employees take care of plants on a regular basis and pick up garbage on a daily basis to maintain the road's appearance.

About 20 employees use their lunch hour from 12:30-1:30 every other month to clean the area, weed the plantings (during summer, when weeds grow fast, these activities are temporarily increased to twice a month) and prune plantings.



Caring for plants on roundabout on the east side of the JR Kita-Hachioji Station

* 1) Adopt-a-Road Program: This is a citizens' program that fits into daily life. A group cooperates with the supervisors (the city) of a nearby road to clean, trim the trees and weed. The program aims to raise awareness about beautification and to invigorate the local community.

Internal Communications

The company magazine ("ACCRETECH") carries special features on environmental problems and introduces the company's efforts to address environmental problems to all employees. The October 2003 edition focused on efforts to develop green products and had special features on the status of company programs and plans for future programs, such as the following:

- ① Green procurement measures
- ② Prohibition and reduction of specified chemical substances
- ③ Future developments in green products activities



October 2003 edition of company magazine "ACCRETECH"

■ Semiconductor Company

Name of business:	Semiconductor Company
Location:	2968-2 Ishikawa-cho, Hachioji City, Tokyo
Designated energy management factory:	Type 1 designated energy management factory
Business:	Manufacture of semiconductor manufacturing equipment
Year operations started:	1963
Area (m²):	14,878m ²
Date of ISO certification:	March 7, 1998



Semiconductor Company

Energy use has increased annually with the growing lineup of new products requiring clean rooms and highly purified water, but ACCRETECH continues to work to reduce energy use. We have also reduced the use of cardboard and plastic in packaging parts and taken measures on returnable boxes.

Environmental data	Amount of electricity used [MkWh]	CO ₂ [t-C]	Service water, waste water [m ³]	Waste materials [t]
INPUT	14,159,100	—	114,456	—
OUTPUT	—	5,393	114,432	327

Water measurement [septic tank waste]	National regulation amount	Levels in ordinances and agreements	Voluntary standard	Actual measurement [maximum]
Hydrogen-ion concentration pH	5.8~8.6	5.7~8.7	6.0~8.5	6.5~8.0
Biochemical oxygen demand (BOD) [mg/l]		300	150	79
Chemical oxygen demand (COD) [mg/l]		—	—	—
Suspended matter [mg/l]		300	100	34

■ Metrology Company

Name of business:	Metrology Company
Location:	4 Higashi-Nakanuki-cho, Tsuchiura City, Ibaraki
Business:	Manufacture of measuring instruments
Year operations started:	1969
Area (m²):	21,867m ²
Date of ISO certification:	March 7, 1998



Metrology Company

Air conditioners account for about 70% of the electricity consumption at the Metrology Company. This is because the temperature must be maintained at a specific level to maintain quality. Reducing air conditioners at the sites with high electricity consumption is one of our environmental goals. Also, we are using CD-ROMs for design drawings and product manuals to cut back on paper use.

Environmental data	Amount of energy used [TJ]	CO ₂ [t-C]	Service water, waste water [m ³]	Waste materials [t]
INPUT	3,205,458	—	8,625	—
OUTPUT	—	1,286	8,625	27

Water measurement [septic tank waste]	National regulation amount	Levels in ordinances and agreements	Voluntary standard	Actual measurement [maximum]
Hydrogen-ion concentration pH	5.8~8.6	5.8~8.6	6.0~8.5	7.5
Biochemical oxygen demand (BOD) [mg/l]		10	10	1.2
Chemical oxygen demand (COD) [mg/l]		15	15	2.5
Suspended matter [mg/l]		15	15	1>

Chronology of environmental protection activities

Jul./'96	Environmental protection activities training programs begin
Sep./'96	Establishment of Environmental Management Committee
Feb./'97	Environmental Philosophy formulated
	Environmental impact studies begin at Hachioji and Tsuchiura production facilities and all divisions
May/'97	Environmental Management Manual released
Mar./'98	ISO14001 certification received at both production facilities
Sep./'98	Establishment of Corporate Motto
Nov./'99	Incineration of waste materials stopped, and incinerator later removed [Semiconductor Company]
Mar./'00	Operation of waste water treatment facilities, such as CMP and back grinders, starts [Semiconductor Company]
May/'00	Removal of heating equipment using crude oil boilers and underground crude oil tank [Semiconductor Company]
Apr./'01	ISO 14001 certification renewal examination passed
May/'01	New main building opens
Mar./'02	Incinerator for home use discarded [Metrology Company]
Mar./'03	Establishment of ACCRETECH Green Procurement Guidelines
Feb./'04	Air conditioners updated from crude oil boilers to electrically powered devices [Metrology Company]
Aug./'04	Establishment of ACCRETECH Group Code of Conduct
Sep./'04	Environmental report issued



Editor's note

Thank you for reading ACCRETECH's fiscal 2004 Environmental Report. This was our first effort at producing an environmental report, and as such, there was a considerable amount of trial and error involved in the process. We are indebted to various organizations for the guidance we received in preparing the report. Please do not hesitate to share your opinions and impressions with us. We value what you have to say, and plan to use the feedback we receive to enhance the quality of ACCRETECH's environmental efforts, and to make next year's environmental report even more useful to our readers.

Environmental Report 2004



For inquiries, please contact:

Tokyo Seimitsu Co., Ltd.

Environmental Management Committee

9-7-1, Shimorenjaku, Mitaka City, Tokyo 181-8515, Japan

Telephone: +81-(422)-48-1011

Facsimile: +81-(422)-49-7068

Website: <http://www.accretech.jp>

