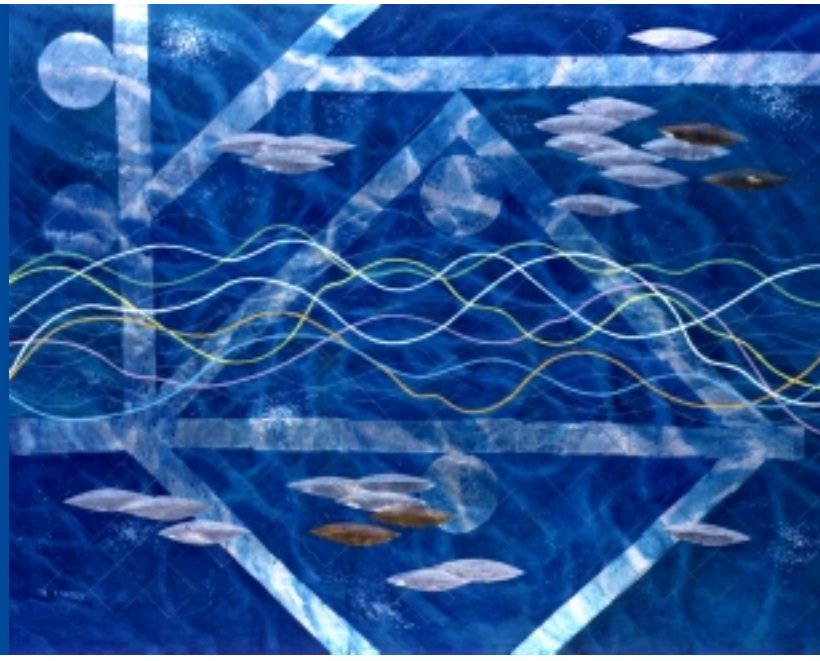
TDK

TDK's Environmental Report 2001



L O V E t h e F U T U R E

What We Can Do Now for the Future

TDK's ENVIRONMENTAL REPORT 2001

contents

Concerning this report

This is TDK's third annual environmental report; the first was released in 1999. This report has been prepared to focus on a number of high-priority topics emerging from the environmental efforts conducted by the TDK group. The guidelines employed in the preparation of this report include the Global Reporting Initiative (GRI) guidelines issued in June 2000, which reflect certain worldwide trends. The GRI guidelines have been incorporated on an trial basis; the makeup of the report has been altered due to their inclusion.

TDK issues its annual environmental reports for the purpose of providing information on business activities and environmental activities conducted over the one-year period from April through March of the following year. Analyses of the environmental burden of activities at plants are carried out by June of each year, and the report is generally issued the following September.

TDK's Environmental Report 2001 was compiled on the basis of results recorded by the TDK group as a whole, from April 1, 2000, to March 31, 2001. The report also contains sections relating the details of activities taking place from April 1, 2001, and thereafter, and provides a preview of future activities.

Note: References to a fiscal year in this document pertain to the period beginning on April 1 of the year named and ending on March 31 of the following year. Thus, fiscal 2000 covers the period from April 1, 2000, to March 31, 2001.

Greeting

With the arrival of the twenty-first century, the world has ushered in the Era of the Environment. In Japan, a new law provides a renewed emphasis on transforming our resource-consuming society into a resource-recycling society. The Basic Law for Establishing the Recycle-based Society came into effect in April. Under it, companies in the electronics industry must not only work towards sustainable development with greater miniaturization and weight reduction of their products, they must also take into consideration the entire lifecycle of their products—from materials procurement to product disposal—and provide products with low environmental impact.

At TDK, we're proud to report on our own initiative which expresses our commitment to preserving our environment. Our plan—Exciting 108—is a medium-term plan covering April 2000 to March 2004, in which we have adopted a Zero Emission Strategy as a fundamental principle. The plan provides for: (1) Zero-emission activities that prevent valuable resources from being exhausted; (2) Energy conservation activities that contribute to the prevention of global warming; and (3) Reduction in the use of hazardous materials so that we can contribute to a healthier, safer, environment.

Specific medium-term goals have been set, and we're working hard to reach them. We've already made significant achievements in the plan's first year. We've introduced closed systems that do not create waste. We've reduced the volume of waste that goes to landfills. And we've completed development of technology to allow the use of lead-free solder in our products. We'll continue making progress in the future, expanding closed systems, implementing the development of lead-free products, strengthening energy conservation efforts, and looking for other opportunities to contribute to environmental preservation.

We have also begun a trial change in our accounting methods to include the implementation of environmental activities as a central element of corporate policy, thus clarifying their cost effectiveness.

This report describes TDK's environmental activities during the fiscal year ended March 31, 2001. I hope that it will increase your understanding of our commitment to the environment. And I look forward to receiving your comments so that we may enhance the quality and effects of our environmental activities.

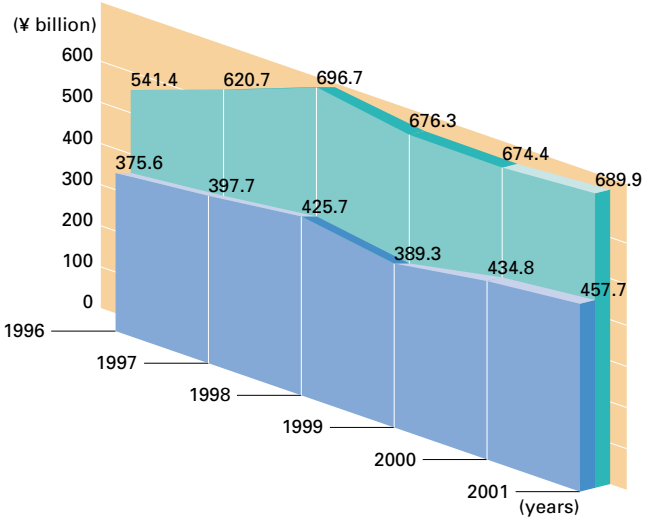
Hajime Sawabe
President and CEO

Corporate Profile

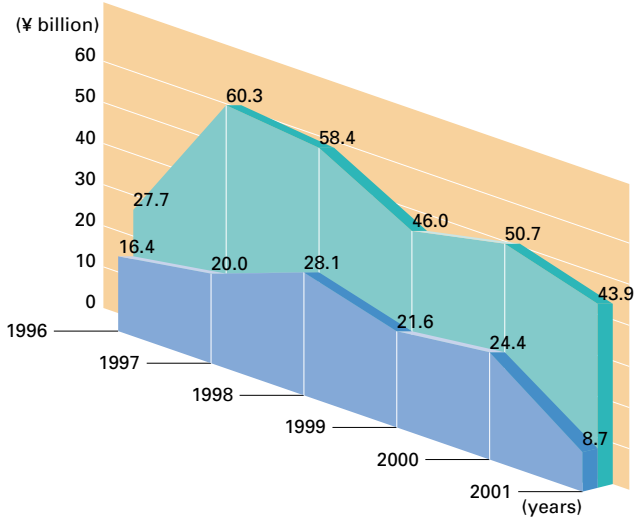
Corporate Profile

Registered name	TDK Corporation
Corporate headquarters	1-13-1 Nihonbashi, Chuo-ku, Tokyo 103-8272, Japan
Date of establishment	December 7, 1935
Paid-in capital	¥32,641,976,312
Number of employees	¥37,251 (consolidated)
Net sales	¥689,900 million (consolidated)
Net profit	¥43.9 billion (consolidated)
	(All figures are for the fiscal year ended March 31, 2001.)

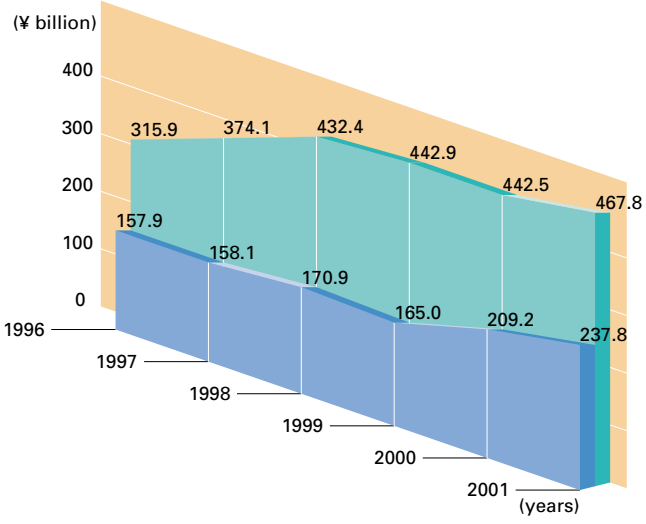
Net sales Consolidated Parent company



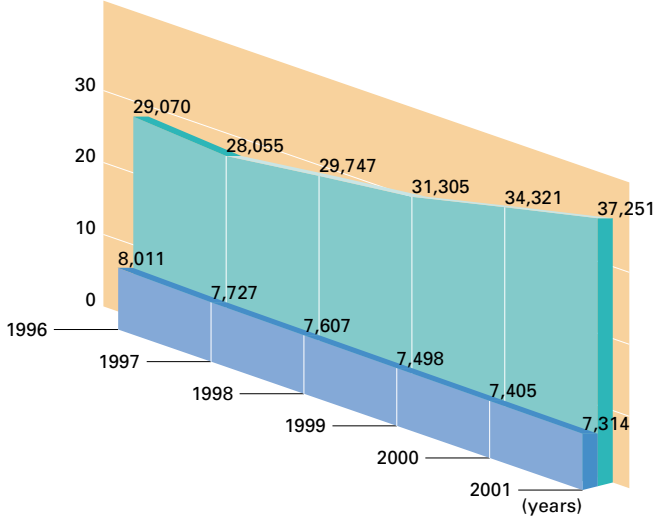
Net profit Consolidated Parent company



Overseas sales Consolidated Parent company



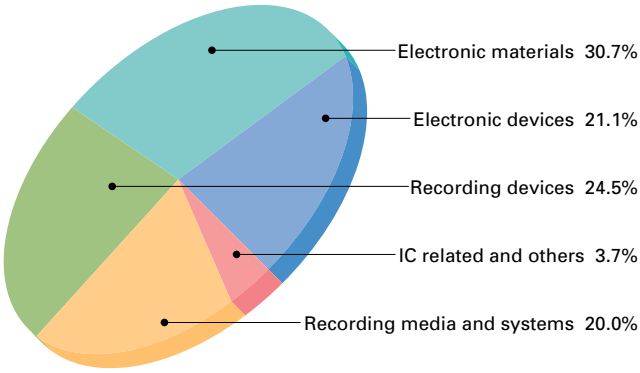
Number of employees Consolidated Parent company

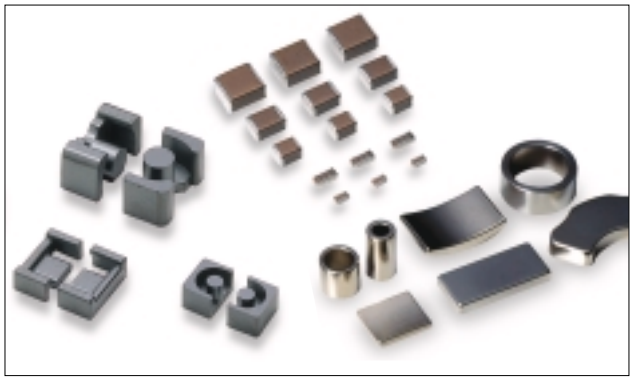


Note: The years shown in the graphs are fiscal years, running from April to the following March, with "2001" referring to the year ending March 31, 2000.
Please refer to our annual report for more financial information.

Main Products

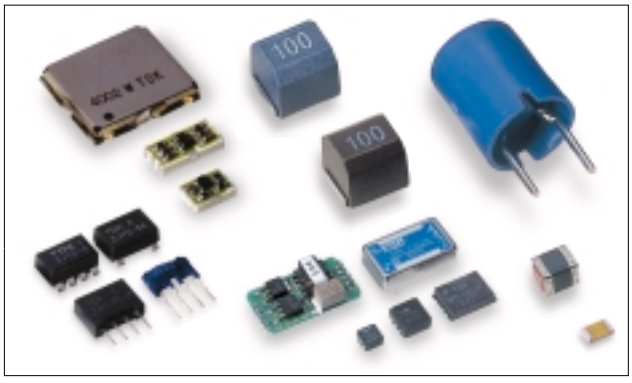
Sales Comparison by Products





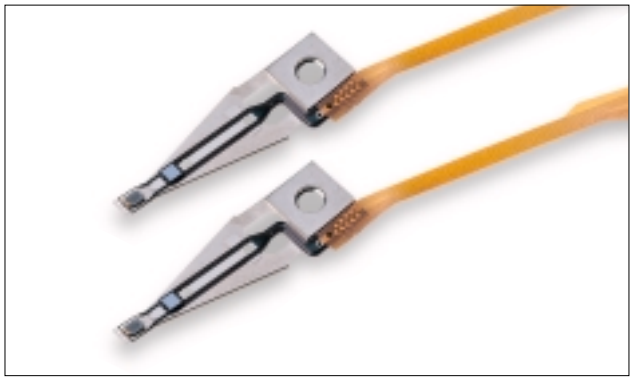
Electronic Material

Multilayer chip capacitors, ferrite cores for inductors and transformers, deflection yoke cores for TVs and computer monitors, ferrite and rare-earth metal magnets



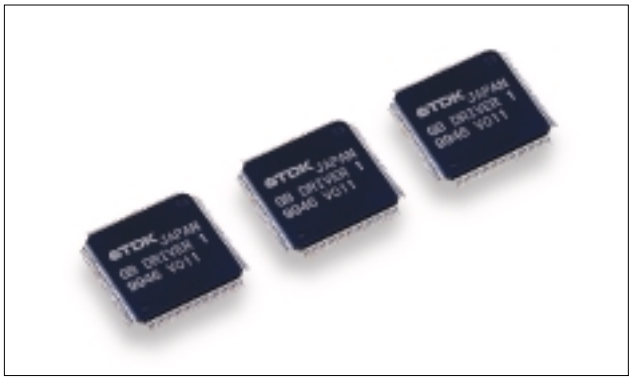
Electronic Devices

Inductors, EMC components, high-frequency components, NTC thermistors, chip varistors, DC-DC converters, DC-AC converters, switching power supplies



Recording Devices

MR and GMR heads for hard-disk drives, heads for floppy-disk drives, thermal printer heads



IC related and Others

ICs for modems and LAN/WAN applications, factory automation equipment, radio wave anechoic chambers

Recording Media and Systems

Audiotapes, videotapes, CD-R discs, MiniDiscs (MD), data storage tapes for computers, PC cards

Greeting from Managing Director

Becoming an Environmentally Advanced Company

Today, environmental preservation is a global issue, and companies are under increasing pressure to work aggressively towards sustainable development in a resource-recycling society. In fiscal 2000, TDK made great strides in promoting environmentally sound practices. Below is a brief description of our major achievements and future goals.

Zero Emissions

A strategy for zero emissions has been a major focus. We introduced closed systems as a concrete measure for eliminating waste, and we promoted reuse and recycling in those situations where waste generation can't be avoided. Our goal is to reach zero emissions and 100 % recycling by March 2004. Overseas, zero emissions are being pursued at five plants, with TDK Recording Media Europe already successfully achieving its goal.

Lead-free Products

Technology for the creation of lead-free solder was completed earlier, and volume production and confirmation activities are currently underway. We are also taking our commitment further by developing technologies for other lead-free materials.

Energy Conservation

We are working hard to increase energy conservation, but we have not yet reached our internal goals. We'll continue to step up our efforts, setting up energy management tools to help us pinpoint areas where conservation can be accelerated and where further conservation can be promoted.

Environmental Management

Four overseas plants and the head office acquired ISO 14001 certification this fiscal year. Certification of other sites, held up by delays in the review of process forms, is expected by December 2001.

By having each employee consider "What can be done today for the sake of tomorrow?", we're confident that we can contribute to the creation of a resource-recycling society.

Shunjiro Saito

Shunjiro Saito
Executive Vice President in Charge of Technology and Environment

*TDK Recording Media Europe S.A.

Corporate Motto

"Contributing to culture and industry through creativity"

Corporate Principle

Employees attributes "vision," "courage," and "trust"

TDK Environment Charter

Basic Principle

The global environment is the womb supporting all life forms on Earth. Recognizing this basic principle, TDK is committed in all its business operations to handing over a more wholesome environment to future generations.

Basic Policy

TDK is committed to a resource-recycling society. All our corporate activities are geared toward this basic policy. We pay attention to the protection of the environment, the conservation of energy and resources, and all other factors that may affect the global environment.

Action Program

As a good corporate citizen, TDK pursues its corporate motto by operating in a way that constantly considers the effects of its actions on the global environment and natural resources. To this end, we have established the following guidelines;

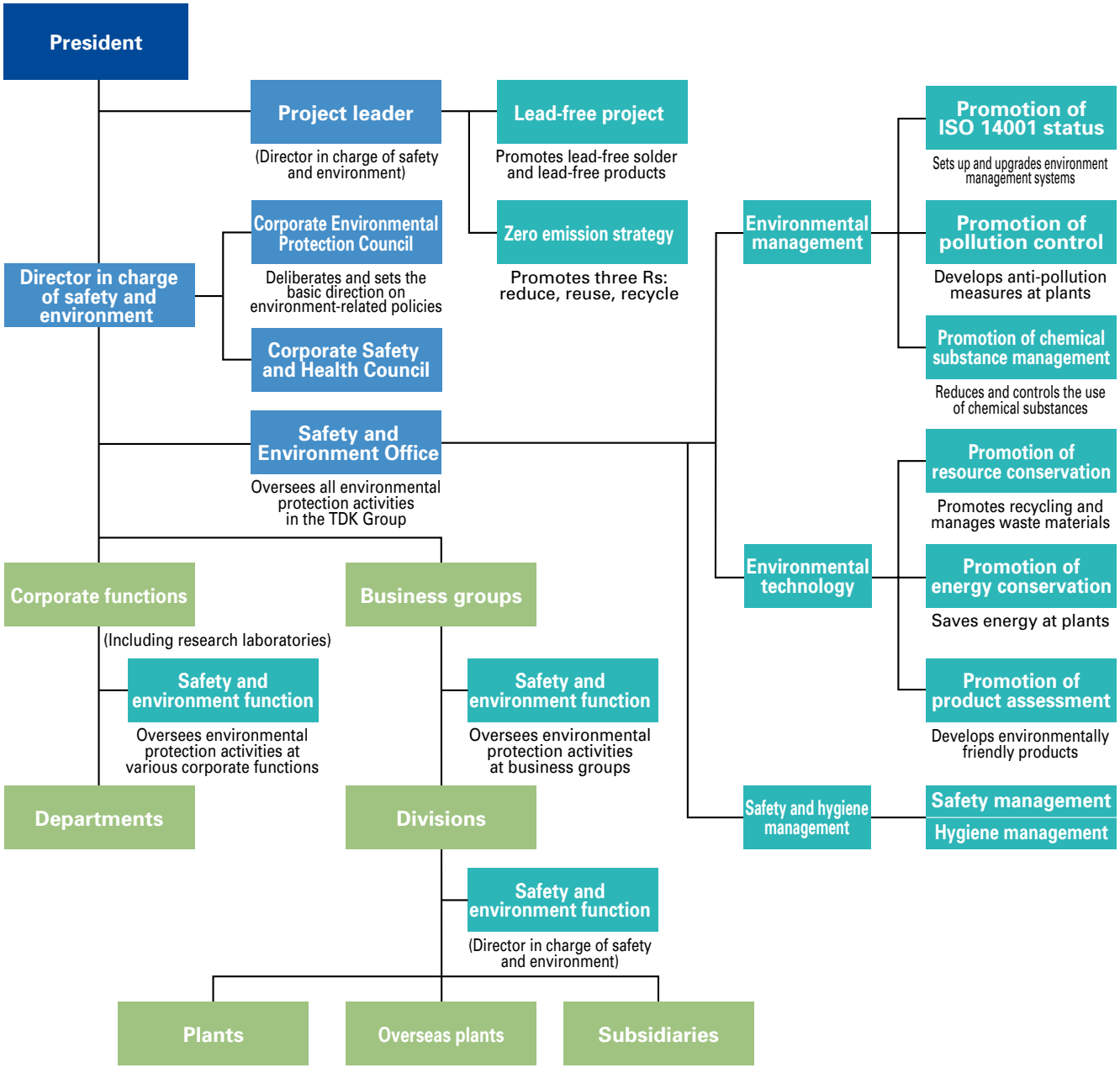
1. Establish a corporate organization under the leadership of a board director to promote and implement environmental management policies.
2. Uphold all laws and regulations related to the protection of the environment and raise the level of environmental management.
3. Enforce environmental auditing and promote voluntary enforcement of environmental management.
4. Issue environmental management provisions and annual reports on environmental management and constantly update environmental management standards.
5. Create products that are compatible with the company's policy of reducing the environmental burden on earth. This requires that we conduct assessments on environmental safety during the product design stage and take both energy saving and resource conservation into account during product development and manufacturing.
6. Undertake environmental management activities throughout the entire TDK Group, including all affiliated companies and overseas manufacturing units.
7. Contribute, as a corporate citizen, to the protection of the global environment.
8. Raise environmental awareness among all TDK employees by means of education and support employees' participation in environmental activities.

Revised in March 1995
Established in March 1993

Corporate Set-up for Environmental Protection

Corporate Activities Implemented Across the Board

TDK's structure for driving its efforts to protect the earth's environment is under the direct authority of the president. Starting with the Corporate Environmental Protection Council, which deliberates and sets the basic direction of the company's environment-related policies, it spans the entire spectrum of the TDK Group—in all business divisions, corporate functions, and subsidiary companies. We accelerate environmental activities under a company-wide project.



The Environmental Management System (EMS)

Helping to Build a Resource-Recycling Society

In TDK's view, an environmentally conscious company is one that earns a fair profit by providing the world with useful products while using resources in the most efficient way possible and refraining from the use of hazardous substances. Through the implementation of an environmental management system based on ISO 14001, the international environmental standard, TDK exerts effective overall control over environment-related activities involved in the management of its offices, its corporate profile, its manufacturing processes and products, and the procurement of materials. The combined effects of these efforts will pave the way to meet our zero emissions target by March 2004 and be a part of the efforts to build a resource-recycling society.

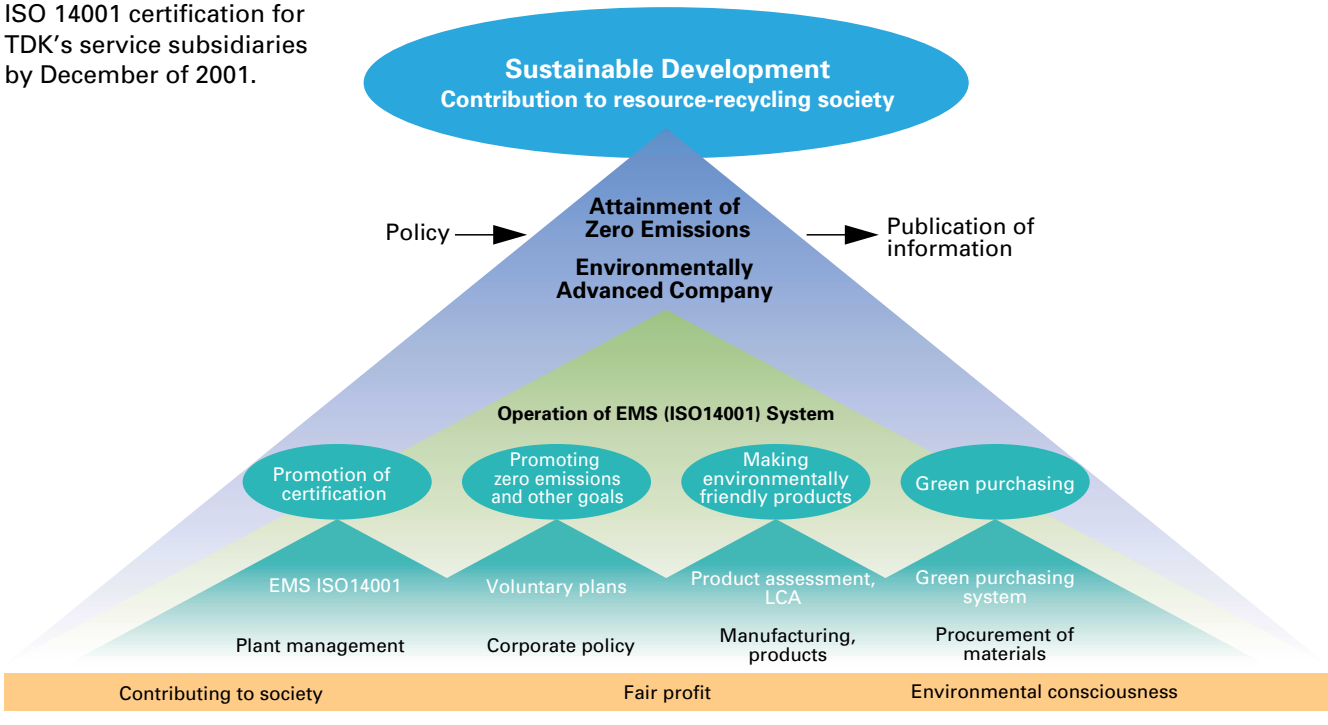
Acquiring certification for the EMS

TDK places a great deal of importance on environmental management. ISO 14001 certification has been obtained for all of TDK's manufacturing and R&D facilities in Japan. TDK's head office, a non-manufacturing facility, became certified as well in March of 2001. The company is also advancing toward the goal of obtaining ISO 14001 certification for TDK's service subsidiaries by December of 2001.

Making the EMS More Effective

TDK is enacting a variety of measures to ensure that the Environmental Management System is firmly in place. These include establishing a training regimen that offers basic training and follow-up training for in-house auditors as well as basic courses on the environment; improving monitoring and measuring systems designed to prevent environmental pollution; and reevaluating preventive and relief measures used in emergency situations. In fiscal 2000, 140 TDK employees were trained as in-house auditors, and similar training was commissioned for another 90 people outside the company.

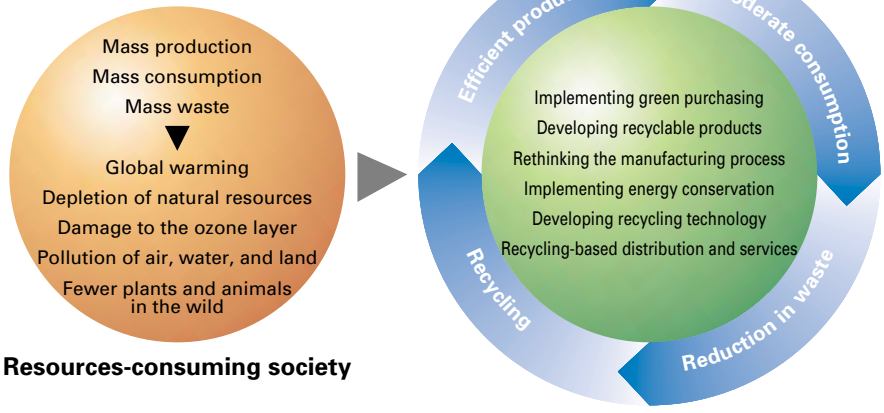
In-house auditor training



Self-Promoting Environmental Targets and TDK's Environmental Efforts

Progress and the Self-Promoting Environmental Target

TDK adopted an Environmental Voluntary Plan in 1993 in an effort to set specific targets for action on environmental concerns. In order to translate the plan into more concrete activities, we addressed individual challenges by establishing Self-Promoting Environmental Targets. When necessary, these Self-Promoting Environmental Targets are revised, depending on progress made and in response to changes in the situation in Japan or overseas. Details on the progress achieved as of the end of March 2001 are shown below.



Resources-consuming society

Creating a society that recycles resources

Environmental protection targets* and actual results under TDK Group initiative

Subject	Target
Building an environmental management system (Promoting the creation of an environmental management system in line with ISO 14001 standards)	• Obtaining ISO 14001 certification at overseas plants by March 2001. • Obtaining ISO 14001 certification at head office and service subsidiaries by March 2001.
Developing environmentally friendly products	• 100% implementation of product assessment for new products. • Completed transition to lead-free soldering by March 2001. • Continuing reductions in the use of lead in products. • Introduction of life-cycle assessment (LCA) to permit quantitative assessments of environmental burdens.
Preventing global warming	• Reducing energy consumption (calculated in terms of crude oil consumed) per unit of CO_2 emitted by 25% from fiscal 1990 levels. • Reducing PFC emissions by 80% from fiscal 1995 levels by 2010.
Zero Emission Strategy	• Achieving progress with the three Rs-reduce waste, reuse, and recycle. • Eliminating waste emissions from all plants by March 2003. • Reducing overall emissions from all plants by 10% from fiscal 1994 levels by March 2004.
Reducing the use of environmentally harmful substances	• Eliminating the use of methylene chloride by March 2001. • Reducing emissions of chemical substances by 20% from fiscal 1997 levels by 2005.
Green purchasing	• Promotion of green purchasing for raw materials of parts used in production. • Expansion of green purchasing for office supplies. • Actively purchasing lead-free products.
Local contributions	• Participation in local events (afforestation campaigns, clean-up activities).

* Self-promoting environmental targets were revised in December 2000.

Revisions of Self-Promoting Environmental Targets

The following revisions were made to self-promoting environmental targets in fiscal 2000.

Building an EMS
TDK did not succeed in obtaining ISO 14001 certification for all of its overseas production facilities by the target date of March 2000, so a new target date of March 2001 has been set.

Development of environmentally friendly products
Upon completion of the implementation of product assessments overseas and the introduction of a system for approving environmentally friendly products, new targets have been set for the purpose of improving product assessment. In addition, the relative importance of efforts to promote lead-free products is being reconsidered.

Preventing global warming
In light of the need to prevent further global warming, targets related to energy conservation have been revised; they are now calculated on the basis of CO_2 emissions rather than crude oil consumption. In addition, since the previous target for reducing PFC emissions was met, a more ambitious target has been set.

Zero Emission Strategy
In keeping with TDK's new medium-term plan—known as Exciting 108—the final year for the achievement of zero emissions has been moved up two years. In addition, in order to ensure that the three Rs (reduce waste, reuse, recycle) are being actively promoted we have established targets for reducing the volume of emissions.

Other
Green purchasing and local contributions have been newly established as challenges to be confronted.

Actual results for fiscal 2000		Future efforts	Related pages
• Four plants obtained certification in fiscal 2000. • TDK's head office obtained certification.	✕ ✕	• Certification of the remaining three plants by December 2001. • Certification of non-manufacturing subsidiary companies by December 2001.	26 7
• 100% implementation. • Successful completion of technological developments required for lead-free soldering. • Measures aimed at ensuring that some materials are lead-free have been completed. • The decision was made to incorporate LCA.	☀ ☀ ↗ ↗	• Continuing with 100% implementation. • Will carry out activities to customer approval of products. • Improving the development of lead-free materials. • Promoting quantitative assessments of environmental burdens by incorporating LCA.	12 13 13 12
• 0.5% worse compared to last fiscal year, 3.5% worse compared to fiscal 1990. • 105.2% higher compared to last fiscal year, 44.7% lower compared to fiscal 1995.	↘ ↘	• Introducing co-generation systems and studying wind-powered generation of electricity. Promoting greater efficiency in production processes and energy-efficient air conditioning. • Considering switching to substitute materials.	20 21
• Successfully introduced closed-system that eliminates waste emissions. • Reduction of 4,206 tons compared to last year to 13,562 tons in the volume of waste handled by waste-disposal firms. • 3.5% compared to last year, 5.6% lower compared to fiscal 1994.	↗ ↗ ↗	• Committed to achieving zero emissions by March 2004, by closed-system and implementing such systems on a company-wide basis, thereby promoting reduced waste emissions and moving toward 100% recycling of unavoidable emissions.	17–19
• Completely eliminated at six more plants; not yet completely eliminated at nine other plants. (28 of 37 plants are completed so far.) • 3.1% lower compared to last year, 9.0% lower compared to fiscal 1997.	✕ ↗	• Complete elimination scheduled to be achieved by September 2001. • Ongoing reductions focusing on the complete elimination of methylene chloride.	23 23
• Surveys conducted on 300 major suppliers. • *TDK Green Purchasing Guide (Office Edition)* has been compiled. • We have begun requesting that suppliers provide parts suitable for lead-free soldering.	↗ ↗ ↗	• Conducting continuing surveys of new suppliers. • Expanding green purchasing for office supplies. • Continually promoting the purchasing of lead-free products.	16 16 16
• Various plants participated in afforestation campaigns and clean-up activities.	↗	• Ongoing active participation at each plant.	29

☀:Self-promoting target achieved ↗:Progress toward self-promoting target ↘:Negative movement away from self-promoting target ✕:Self-promoting target not yet achieved

Environmental Costs and Burdens

Toward the Introduction of Environment Accounting

TDK has been monitoring its environmental burdens and the cost of protecting the environment for some time, as part of the implementation of environmental accounting, compiled TDK Environment Accounting Practices Summary, in order to clarify the relationship between these costs and burdens and promote more effective environmental policies. As of April 2001, we began introducing environment accounting on a trial basis at designated model plants, based on the TDK Environment Accounting Practices Summary. Based on the combined results, as shown in the following table, we expect to introduce these practices at all TDK's plants and are considering the development and use of indicators that would show the effects of environmental conservation.

Environmental costs for fiscal 2000

Category		Environmental costs: Total investment for this fiscal year (¥ thousand)	Environmental costs: Total cost of environmental protection and management for this fiscal year (¥ thousand)	Environmental costs: Staff for this fiscal year (number of employees)	Impact of environmental protection activities	Overall environmental burden for this fiscal year	Increase or decrease in fees relative to previous fiscal year
1. In-plant area costs							
Preventing pollution (regulatory controls)	·Preventing air pollution ·Preventing water pollution ·Preventing noise pollution ·Preventing vibration ·Preventing odors	599,123	524,476	65	Status of observance of air pollution laws (see page 38–56)	Airborne emissions SOx(tons) 34 NOx(tons) 472 Soot and dust(tons) 18 Waste water (tons) 3,730,000	Airborne emissions SOx(tons) 4 NOx(tons) 109 Soot and dust(tons) -1 Waste water (tons) 221,000
Global environmental protection	Preventing global warming (includes promoting afforestation)	139,745	119,974			Charges for energy used (t–C) 108,460	Charges for energy used (t–C) 5,152
	Preventing depletion of the ozone layer	0	72				
Resource recycling	Conserving resources (includes in-house recycling)	103,644	409,623		Depreciation of assets (¥thousand)	Major raw materials used (tons) 49,000 Volume of water used (tons) 4,243,000	Major raw materials used (tons) -3,000 Volume of water used (tons) 85,000
	·Outside recycling ·Disposal of waste matter	14,945	598,628		290,428	Volume recycled in-house (tons) 14,074 Volume of waste handled by waste disposal firms (tons) 13,562	Volume recycled in-house (tons) 5,562 Volume of waste handled by waste disposal firms (tons) -4,206
Risk management	·Countermeasures on emissions of chemical substances ·Soil contamination risk management	5,000	9,331		Number of cases 2	Emissions of PRTR-governed chemical substances (tons) 1248.3	Emissions of PRTR-governed chemical substances (tons) -39.9
2. Upstream and downstream costs	·Green purchasing system ·Modifications to products, recycling of packaging, etc.	0	2,804	0			
3. Cost of management activities	Establishing, operating, obtaining certification and examining EMS	0	25,550	47			
	Environmental education		9,858				
4. R&D		0	82,002	18	Research and development of environmentally friendly products (number of projects) 3		
5. Cost of community activities	Participation in and contributions to environmental groups and promoting afforestation outside company		1,060				
	Disclosing environmental information		43,033		Number of items published 12		
6. Cost of environmental damage	Restoration required by soil contamination or other damage to the natural environment	0	73,819	0	Number of recovery efforts conducted 2		
	Environment-related insurance costs		0				
	Assessments levied		4,294				
	Fines, surcharges, law suits		0				
Total		862,457	1,904,524	130			

Environmental investment (¥ millions)	862
Total investment (¥ millions)	99,452
Ration of environmental investment to total investment (%)	0.9

(1) These are total results for production facilities and R&D facilities belonging to TDK and its domestic subsidiaries.
(2) The investment amount for the fiscal year is the amount paid out in fiscal 2000.
(3) Depreciation of equipment is not included as part of environmental security maintenance costs for the fiscal year.
(4) The employees listed for the fiscal year are those having duties half or more of which concern the activity listed.
(5) Airborne discharges are calculated on the basis of the amount of fuel consumed. NOx and soot and dust discharges are calculated at the sites, which generate soot.
(6) For plants for which waste water volume was not recorded, the waste water volume is calculated as the volume of water used.
(7) For energy usage, CO_2 volumes are calculated based on electricity and fuel consumption.
(8) Figures for the depreciation of assets do not include cost reductions resulting from recycling.
(9) The volume of major materials used was calculated on the basis of actual procurements.
(10) The volume of water used includes both industrial use water and ordinary sewer water.
(11) The cost of dealing with products and recycling packaging refers to fees paid to designated firms in accordance with the Law for the Promotion of Sorted Collection and Recycling Containers and Packaging.
(12) The cost of establishing, operating, obtaining certification for, and conducting inspections for the EMS are included among the operating costs for environmental protection organizations.
(13) The number of research and development cases for environmentally friendly products refers to the total number of topics addressed by TDK's research and development sections.
(14) The number of items disclosing environmental information published refers to the number of items carried in five industry publications.

Environment Accounting (Combined results for the Mikumagawa site in fiscal 2000)

Category		Environmental costs: Total investment for this fiscal year (¥ thousand)	Environmental costs: Total cost of environmental protection and management for this fiscal year (¥ thousand)	Environmental costs: Of which, cost for new activities (¥ thousand)	Staff for this fiscal year (number of employees)	Economic effects: Total amount of reductions achieved due to environmental conservation activities during this fiscal year (¥ thousand)	Environmental effects: Improvement in environmental burden due to environmental conservation activities during this fiscal year	Environmental effects: Observance of regulations and other results (during this fiscal year)	Total volume of environmental burden for this fiscal year	Volume relative to previous fiscal year
1. In-plant area costs										
Preventing pollution (regulatory controls)	·Preventing air pollution	0	121,544	0	3			Refer to data for information on observance of air pollution laws	Airborne emissions	
									SO_x(tons) 11.2	SO_x(tons) 0.3
									NO_x(tons) 26.8	NO_x(tons) 0.8
									Soot and dust(tons) 0.2	Soot and dust(tons) 0.0
	·Preventing water pollution	0	15,809	0				Refer to data for information on observance of water pollution laws	Waste water (tons)	
									474,768	-2,056
	·Preventing noise pollution	0	359	0				Complaints received about noise: 0		
	·Preventing vibration	0	0	0				Complaints received about vibrations: 0		
	·Preventing odors	0	0	0				Complaints received about odors: 0		
Global environmental protection	Preventing global warming (includes promoting afforestation)	2,000	2,101	687	0	Reduction in electricity and fuel charges: 50,875	Volume of CO_2 reduction (t-C): 841	Area of company property afforested (m²); number of trees planted: 0	Charges for energy used (t–C)	
									11,761	-538
	Preventing depletion of the ozone layer	0	0	0	0		Volume collected or disposed of (CFC-11 conversion tons): 0.01			
Resource recycling	Conserving resources (includes in-house recycling)	0	79,762	0	10	Reduction in cost of raw materials, etc: 461,715; Volume of water used: 0	Reduction in cost of raw materials, etc: 5,861; Volume of water used: 0		Volume of water used (tons)	
									16,500	-5,785
									Volume of water used (tons)	
									502,670	1,492
	Outside recycling (includes sales of valuable materials)	0	97,282	0		Profits on sale of assets: 132,794	Volume of assets sold (tons): 538; Volume recycled outside company (tons): 1,948		Volume recycled in-house (tons)	
									1,948	749
	Reduction of waste matter	2,750	1,089	1,089		Reduction in charges paid to disposal firms: 1,908	Reduction in volume of waste matter (tons): 268			
	Waste disposal	0	11,170	0					Volume of waste handled by waste disposal firms (tons)	
									18	-586
Risk management	Countermeasures on emissions of chemical substances	0	200	0	0		Reduction in emissions of PRTR-governed chemical substances (tons): 6		Emissions of PRTR-governed chemical substances (tons)	
									5	-21
	Soil contamination risk management	0	46	0	0			Number of cases requiring countermeasures: 0		
2. Upstream and downstream costs	Green purchasing system	0	0					Number of cases requiring environmental surveys: 0		
	Modifications to products, recycling of packaging	0	30		0					
3. Cost of management activities	Environmental conservation measures and organizations	0	82		1					
	Establishing and operating EMS	0	621		1					
	Obtaining and examining EMS certification		1,688							
	Environmental education		178					Total number of people receiving training: 442		
4. R&D		0	0		0			Number of R&D projects for environmentally friendly products: 0		
5. Cost of community activities	Participation in and contributions to environmental groups		225					Area afforested outside company (m²); number of trees planted: 25		
	Promoting afforestation outside company							Total number of people taking part in volunteer activities: 48		
	Disclosing environmental information		0					Number of submissions Number of items published: 0		
6. Cost of environmental damage	Restoration required by soil contamination or other damage to the natural environment	0	0		0			Number of restoration projects: 0		
	Environment-related insurance costs		0							
	Assessments levied		1,302							
	Fines, surcharges, law suits		0							
Total		4,750	333,489	1,776	15	647,292				

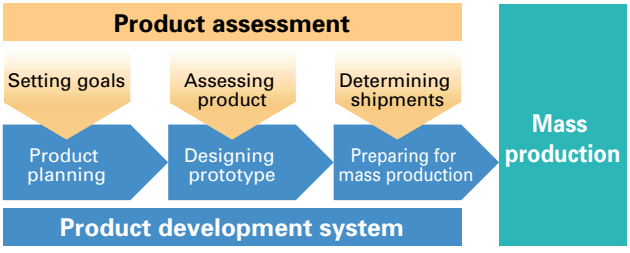
(1) Investment for the fiscal year refers to the total amount paid out during fiscal 2000.
(2) The cost of protecting, maintaining, and managing the environment for the fiscal year includes costs associated with capital depreciation but does not include personnel costs.
(3) The number of employees for the fiscal year refers to the number of employees required based on percentages of work performed.
(4) Figures for airborne emissions are determined from the volume of fuel consumed. Figures for NOx, as well as those for soot and dust, are determined collectively from smoke- and soot-producing equipment.
(5) Volume of energy consumed is calculated based on volume of electricity and fuel which are expressed as volume of CO_2 emitted.
(6) The volume of water used includes groundwater.
(7) Figures for profits on the sale of assets do not reflect the impact of cost reductions achieved by recycling waste.
(8) The number of environmental surveys carried out refers to the number of on-site surveys focusing on suppliers.
(9) Recycling costs associated with packaging and product disposal are fees paid to contractors designated under laws governing the recycling of containers and packaging.
(10) Number of items published is counted based on number of time printed by each site.

Developing Environmentally Friendly Products

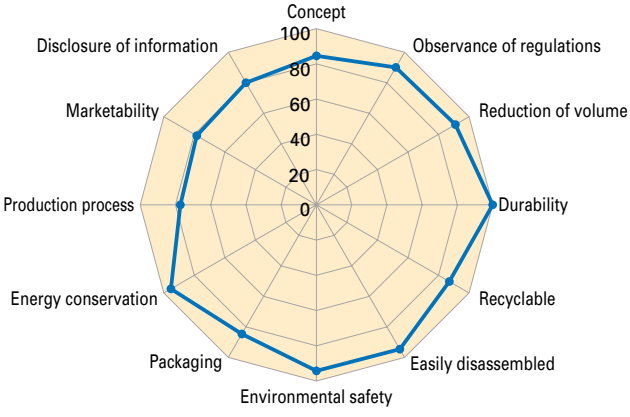
Product Assessment

Product assessment is a way of creating products that impose a lesser burden on the environment. The assessment, which starts at the planning and development stage, determines the impact the product will have on the environment throughout its life cycle. TDK established company-wide standards for product assessment in 1998 and began implementing the system at our domestic plants the following year. By March 2000 we began implementing the system at our overseas plants as well.

At TDK, product assessment is part of product development and is conducted at every stage of development in an effort to minimize the environmental burden.



Examples of the results of implementing environmental assessments



Category	Points*1	Success rate (%)*2
Concept	0.958	86.8
Observance of regulations	1.181	90.3
Reduction of volume	1.000	91.5
Durability	1.000	98.0
Recyclable	1.000	88.8
Easily disassembled	1.082	97.1

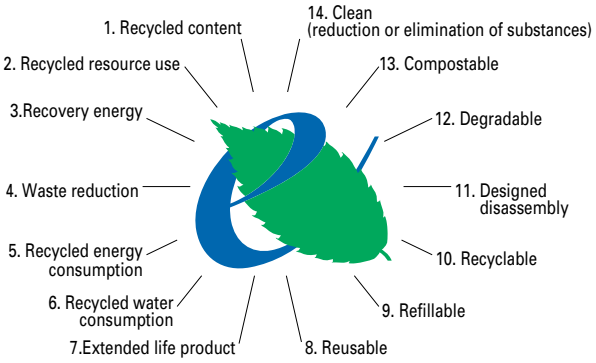
Category	Points*1	Success rate (%)*2
Environmental safety	1.137	93.3
Packaging	1.136	86.9
Energy conservation	1.000	95.1
oduction process	0.979	78.7
Marketability	0.941	89.5
Disclosure of information	1.010	90.5

*1:Point totals indicate the relevant degree of environmental friendliness in comparison with previous products.
*2:The success rate refers to the extent to which the product is considered environmentally friendly for each item assessed.

The Self-Declared Environmental Mark

The TDK self-declared environmental mark, a system for certifyingenvironmentally friendly products, was established in December 1999. The certification aims to clarify the concept of environmentally friendly products and help promote concern for the environment by setting environmental targets when new products are developed.

Fourteen areas of environmental concern



Introducing LCA

Life cycle assessment, or LCA, is a means of quantitatively determining and assessing a product's environmental burden from the procurement of raw materials through final disposal of the product. In order to improve product assessment, TDK decided to introduce LCA in 2000. Beginning in 2001 it will be incorporated on a trial basis in each division, and we plan to utilize LCA for major products from 2002 on.

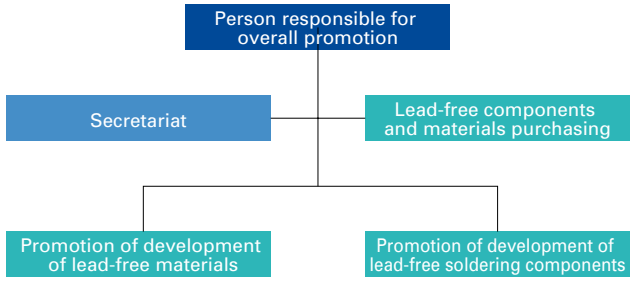
LCA training

Working towards Lead-free

Lead-free Project

Lead is known to be a harmful substance that can cause nerve damage and other serious disorders if ingested. Lead contained in waste materials can be dissolved by acid rain, and with the rapid increase in the prevalence of acid rain in the past few years, there are fears that lead will make its way into groundwater, rivers, and ultimately drinking water. To help combat this growing environmental threat, TDK has been steadily reducing its use of lead company-wide since May 1995.

Promotion System

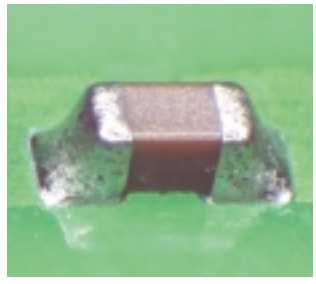


Lead-free Soldering

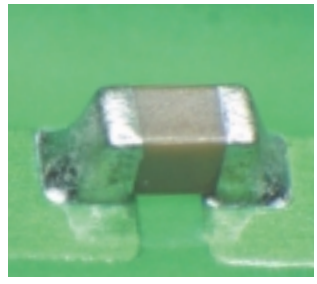
Lead-free solder, because it has a melting point higher than that of solder made from lead-tin components, has possibility to do damage to peripherals when soldering. Besides, in order to incorporate the highly reliable bonding qualities of lead-free solder, it is necessary to employ lead-free soldering for component terminals' side, too. TDK completed development of lead-free soldering technology in March 2001 and plans to secure approval for its use and have mass production systems employing the new technology completed by March 2002.

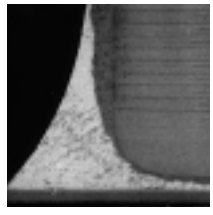
As of April 2001, the development of electronic components that accommodate lead-free soldering and the use of lead-free soldering will be compulsory. After that products that cannot meet the standards will not be approved under the product assessment system and will not be developed.

Lead-free solder



Lead solder





Cross section of lead-free solder's junction

Lead-free Materials

TDK has developed large-capacity multilayer ceramic capacitors made from dielectric materials that do not require the use of lead, and is working to develop the world's first lead-free ceramic resonators. In the future, we will improve the way we develop lead-free materials, as we steadily reduce the use of lead in TDK products.

Developing Environmentally Friendly Products

Reduction of waste materials

Energy conservation

Environmentally Friendly Products

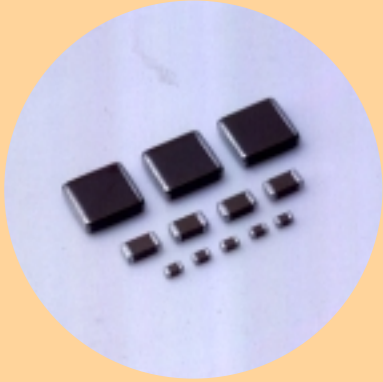
Decreased use of hazardous substances

Responses to the elimination of lead

Resource conservation

These products feature

- **Base-metal-electrode multilayer ceramic capacitors**
  We have introduced the industry's first base-metal electrodes made from completely lead-free materials, which accommodate conductive adhesive.



- **Filters for ETC use**

Switching sources

Through the use of the latest circuit technology and heat analysis simulation technology, we have improved switching efficiency, thereby enabling reductions in size and weight.

Deflection yokes for flat wide-screen TVs

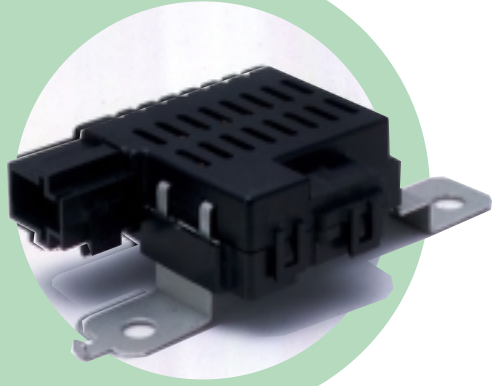
We have succeeded in achieving high-efficiency by adapting these to the configurations of wide-screen TVs. We also utilize connectors incorporating lead-free soldering.

GMR heads

By utilizing high linear density and narrower tracks on the heads, we have succeeded in reducing the volume of materials used per areal density by 42%.

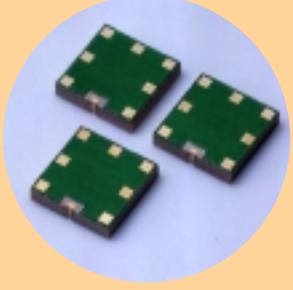
EMC filters

As a result of efforts to make these devices smaller and lighter, size has been reduced by 60% and weight by 50%.



lead-free terminal electrodes.

Patch antennas for ETC use

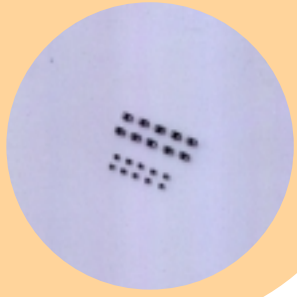


Multilayer chip antennas for Bluetooth TM use

(Examples of products featuring lead-free terminal electrodes)

Three-terminal filter array

NTC 0603/1005



Green Purchasing

Green Purchasing of Production Materials

Based on our Green Purchasing Standards, TDK investigates the environmental management practices of suppliers and the environmental soundness of materials to be purchased.

In our investigation of suppliers, we determine how well the implementation status of the items listed below are in accord with our corporate operation standards.

(1) Environmental management, including the status of ISO 14001 certification.
(2) Control over air, water, and soil pollution, as well as waste management.
(3) Management of chemical substances in all products covered by laws and regulations in Japan and abroad, in support of green products and an environmentally friendly production process.
(4) Disclosure of information and programs of employee education.

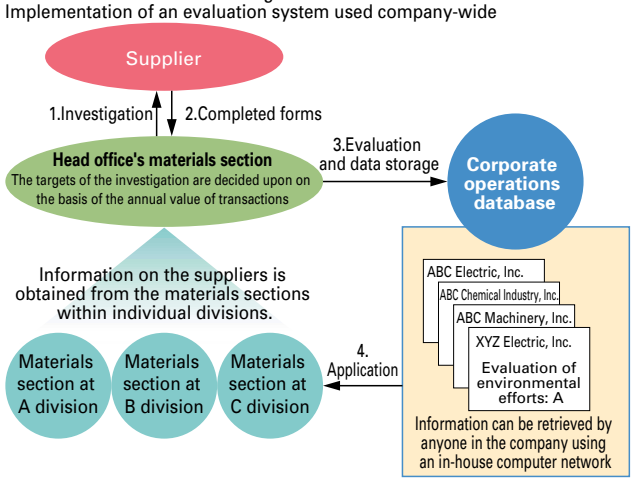
In determining the environmental soundness of materials to be purchased, TDK studies the items listed below, in accordance with our product standards.

(1) Management of chemical substances contained in products.
(2) Efforts to conserve energy and resources.
(3) Recycling and waste-separation efforts.
(4) Managing packages; recovery, reuse, and chemical substances used in it.

In fiscal 2000 TDK investigated the environmental management practices of its 300 largest suppliers. These firms collectively accounted for roughly 80% of total purchasing expenditures for the year.

Process for Investigating Corporate Operations

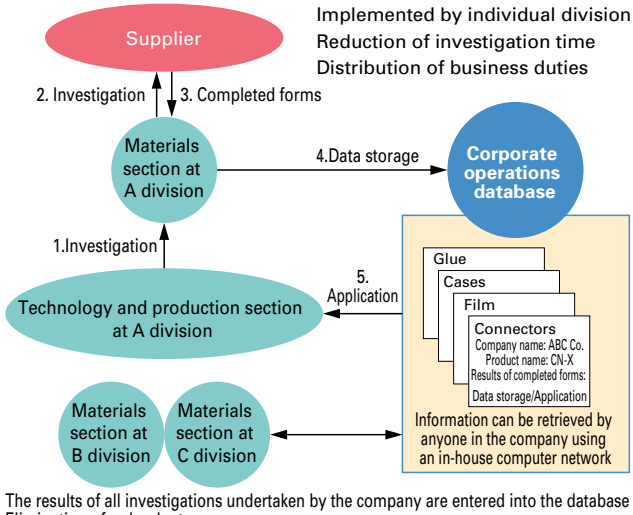
The head office's materials division takes charge of conducting investigations
Elimination of redundant investigations
Implementation of an evaluation system used company-wide



Overall evaluation that takes quality, cost, and delivery into account is issued

Process for purchasing materials

Implemented by individual division
Reduction of investigation time
Distribution of business duties



The results of all investigations undertaken by the company are entered into the database
Elimination of redundant surveys
Expansion of range of product options

Green Purchasing of Office Supplies

TDK's purchasing sections prepare catalogs of environmentally friendly products and give them preference when purchasing office supplies. In the future these efforts will be strengthened through the incorporation of company-wide standards. In March 2001 the company published the *TDK Green Purchasing Guide (Office Edition)*, in order to help reduce the environmental burdens generated by daily office work.

TDK Green Purchasing Guide (Office Edition)

TDK's employee handbook is made from 100%-recycled paper.

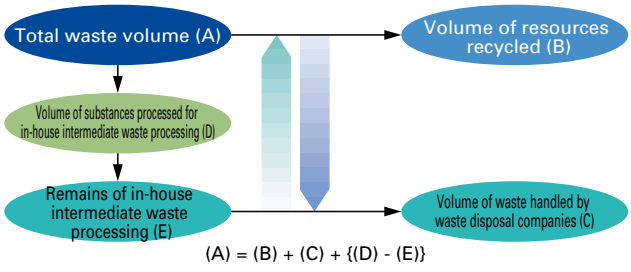
Supplies used at the Mikumagawa plant, made from 100%-recycled paper

Waste Reduction and Recycling

More Thorough and Reliable Management

TDK has established organizations at each of its plants devoted to reducing waste materials and promoting recycling. In accordance with Japan's revised Waste Disposal and Public Cleansing Law, TDK prepares manifests of production waste material management manifests listing such information as the volumes of waste generated in each category as well as the determination and management of waste disposal costs and related measures. At the same time, TDK promotes the three Rs—reduce, recycle, reuse.

Volume of waste matter and summary of work flow



(A) = (B) + (C) + {(D) - (E)}

Waste disposal site at Media Technology

Status of Efforts to Reduce the Volume of Waste Handled by Disposal Firms in Fiscal 2000

In fiscal 2000, our own plants and our domestic subsidiaries were able to reduce the volume of waste handled by disposal firms, compared to the volume handled in fiscal 1994. We exceeded our target of a 60% reduction in our own plants, achieving a 67.2% reduction. Our domestic subsidiaries achieved a 20.1% reduction, but missed their target of 30% due to a shift in production.

The volume of waste handled by disposal firms in fiscal 2000 was 13,562 tons, a decrease of 4,206 tons from the previous fiscal year. The largest categories of waste handled by waste disposal firms, in order, were oil, sludge, plastic, and acid; together these accounted for 84% of the total volume of waste.

Targets for Reducing the Volume of Waste Handled by Waste Disposal Firms in Fiscal 2001

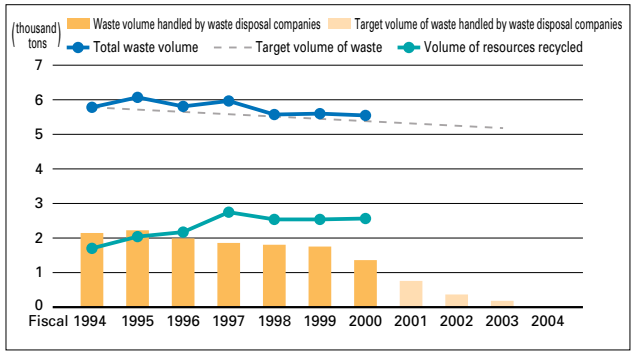
In fiscal 2001, we're aiming higher, working toward a 75% reduction compared to fiscal 1994 for waste from its own plants and a 55% reduction compared to fiscal 1994 for waste from its domestic subsidiaries. And our ultimate goal--to be achieved by March 2004 is a zero volume of waste handled by waste disposal firms.

Reducing the Overall Volume of Waste Generated

TDK has set a target of achieving a 10% reduction, compared to fiscal 1994, of its overall volume of waste by March 2004. The overall volume of waste generated in fiscal 2000 was 54,591 tons, representing a 5.6% decrease from fiscal 1994 level.

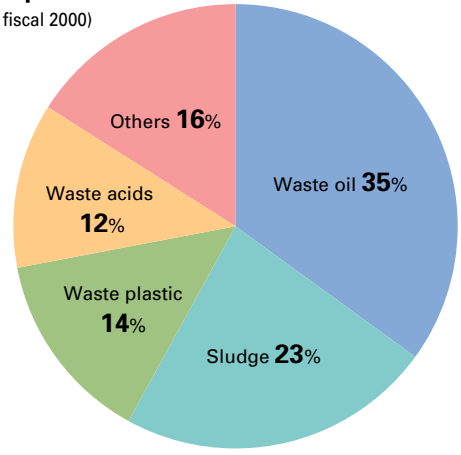
Trends in the volumes of total waste and the waste handled by waste disposal firms

(Total of TDK parent and domestic subsidiaries' product and development bases)



Breakdown of the volume of waste handled by waste disposal firms

(Results of fiscal 2000)



Zero Emission Strategy

Toward a Final Target of March 2004

One of the basic policies embodied in TDK's new medium-term plan, Exciting 108, is the Zero Emission Strategy. The completion of the project has been moved up two years, with March 2004 now set as the final target date for the achievement of zero emissions at all of TDK's own domestic facilities and those of its domestic subsidiaries. In order to put the plan into action, a company-wide Zero Emission Project has been organized and basic plans have been formulated to promote this effort at each plant. In addition, similar efforts have been initiated focusing on five overseas plants, taking into consideration the laws and state of recycling businesses in each respective country.

TDK's Challenging Tasks

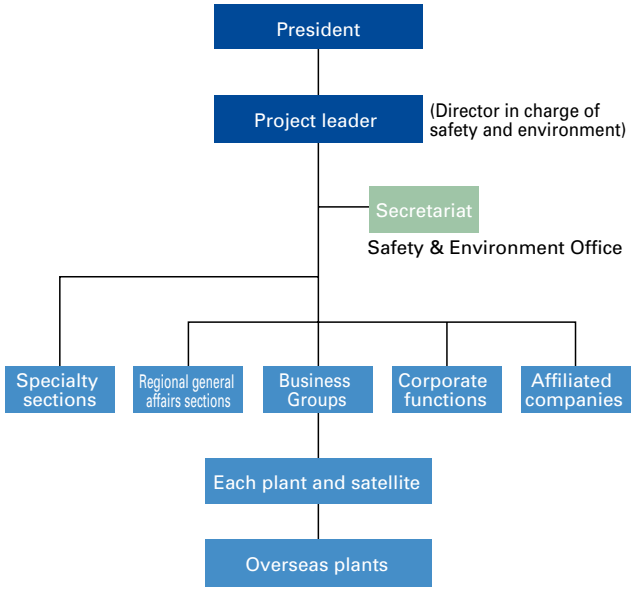
Sludge, waste oil, waste acid, and waste plastic comprise TDK's four largest categories of waste. The company is striving for advances and mechanisms that will curtail the generation of these waste materials to the greatest possible extent, through improvements in manufacturing methods and recycling within production processes. These efforts include accumulating waste disposal technology and exploring the possibility of reusing these materials. For unavoidable waste, the company is promoting reduction and outside recycling, with the ultimate goal of zero emissions. In order for the achievement of zero emissions to be certified, zero emissions will have to be sustained for a period of over six months.

Applying Successful Test Cases throughout All Departments

As part of efforts to promote the reduction and reuse of waste materials during fiscal 2000, particular emphasis was devoted to sludge and waste plastic, two of TDK's four largest waste categories. In order to create closed systems that do not generate waste, ferrite sludge recovery and model processes employing long-lasting plating fluid are being introduced and implemented. Equipment enabling solvents to be recovered is also being introduced, and there are plans to expand the use of this equipment throughout the entire company.

Thorough separation of waste materials has made it possible to practice recycling in every TDK department. In particular, we have made positive advances in the recycling of sludge to produce materials for use in manufacturing iron and cement. We are also working to recycle waste plastic to produce textile materials and materials for making cement.

Organizational chart for promoting the company-wide zero emission project



Definition of Zero Emission

TDK's zero emissions: Eco-factory-type zero emissions

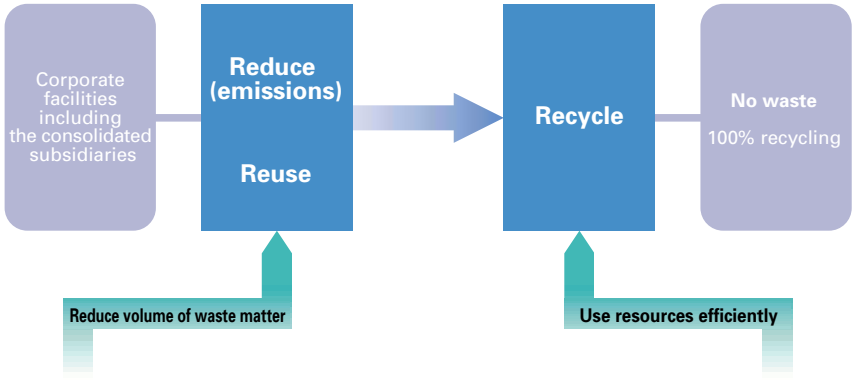
The final target is 100% recycling through reduction, reuse, and recycling of waste matter produced by plants.

Target substances: 17 categories of substances as determined by TDK's waste matter classification.
Sewage and medical waste are not included.

Target venues: Sites having or expected to have ISO certification including the consolidated subsidiaries.

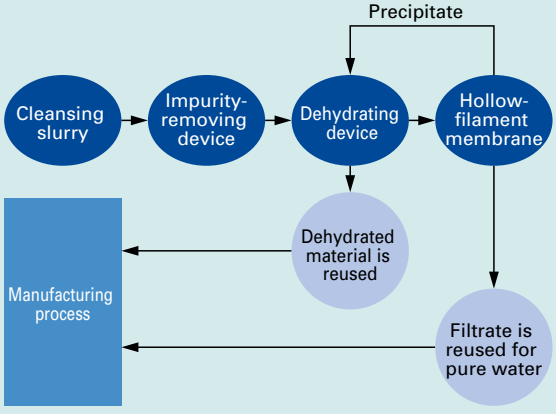
Target dates: End of March 2004 (108th term) for TDK Taiwan Corporation, TDK Components U.S.A., Inc., TDK Manufacturing Deutschland GmbH, DK Recording Media Europe S.A., and BT Magnet-Technologie GmbH.

Examples of Progress toward Zero Emissions



Concrete measures to promote reduction and reuse

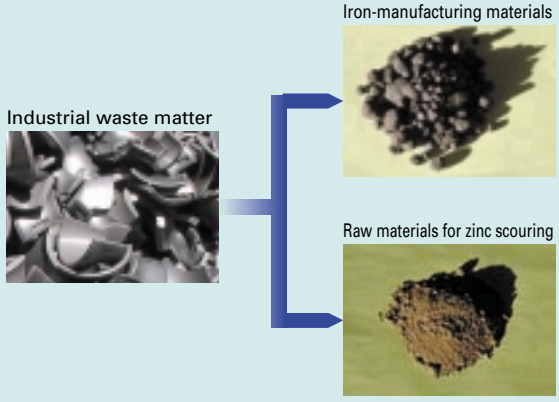
Ferrite material closed system



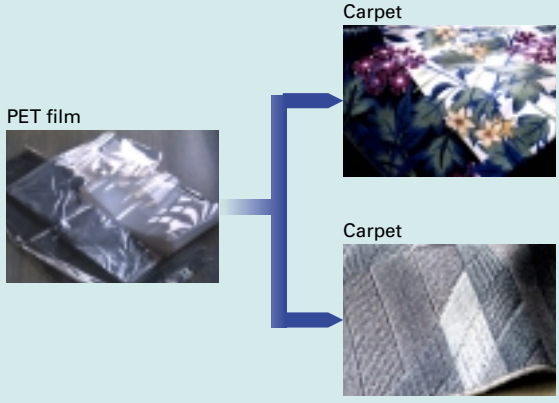
Reproduction device of cleansing solvent

Tie-ups with the recycling business field and progress toward independent business activities concerned with recycling

Recycling ferrite into iron-manufacturing materials



Recycling PET into fiber of a carpet

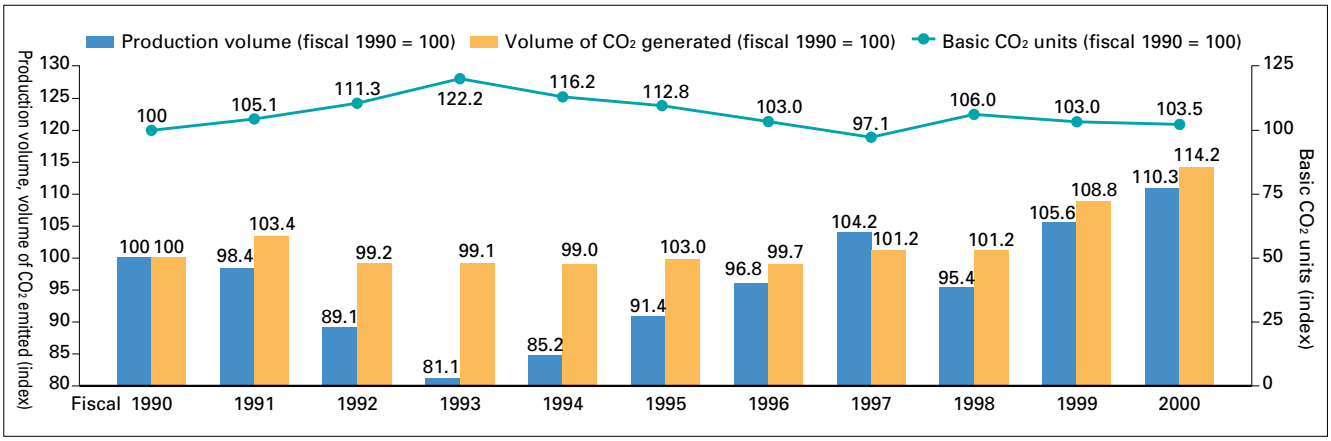


Preventing Global Warming

Promoting Energy Conservation

TDK attaches great importance to fact that restricting CO_2 emissions by encouraging energy conservation is the key to preventing global warming, and we are making progress with energy conservation by making the production equipment in our major domestic plants more efficient. We have set a target of reducing the volume of basic CO_2 units TDK emits per volume of production by 25% in comparison to the fiscal 1990 level. Emissions of basic CO_2 units during fiscal 2000 worsened by 0.5%, due to stagnating production volume.

Trends in TDK's emissions of basic CO_2 units (Total of TDK parent and domestic subsidiaries' product and development bases)

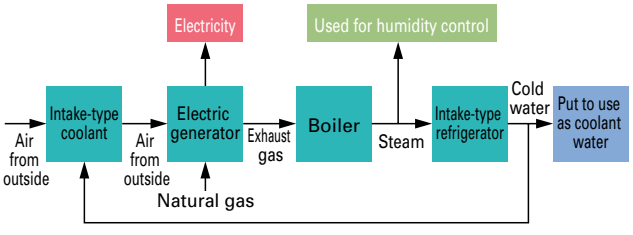


Major Efforts in Fiscal 2000

Introduction of co-generation systems

The Chikumagawa 2nd Technical Center has a clean room, which is required for the production of thin-film heads. The clean room air-conditioning system consumes a great deal of energy. Investigations determined that heat produced by generating electricity could be effectively used to power the clean room's air-conditioning system, and so the decision was made to introduce a co-generation system. The system was initiated in July 2001. By using natural gas as a fuel, we have also managed to reduce CO_2 emissions as well.

Basic design of co-generation system



Wind-powered generation

At TDK's Inakura Plant, which faces the Sea of Japan, a detailed study was begun in April 2001 to explore wind conditions. Based on the results of a year's worth of measurements thus obtained, an investigation will be conducted into the possibility of introducing wind-powered generation of electricity.

Reinforcing observance to Energy Conservation Law

Due to changes in the monitoring of factories by the Ministry of Economy, Trade and Industry as of April 2001, it has become imperative to ensure thorough energy management for each individual item of equipment, based on Energy Conservation Law*. TDK voluntarily monitors energy management at all of its plants that are subject to primary energy management directives. This has led to improved energy management and has illuminated specific areas in need of energy conservation efforts.

* Law Concerning the Rational Use of Energy

Examples of Energy Conservation at TDK Plants in Fiscal 2000

(1) Improvements in production and manufacturing processes

TDK promotes the development of procedures and improvements in manufacturing processes by determining Basic Energy Units and ascertaining product quality.

Energy conservation measure	Plant	Effect
Efficient sintering-furnace operation	Narita	270 MWh/year
Efficient furnace and printing furnace operation	Akita	270 MWh/year
Increased slurry concentration prior to drying	Inakura	100 kl/year (fuel oil conversion)
Elimination of line cleaning	Kisakata TDK	156 MWh/year
Efficient operation of rotary kilns	Hirasawa	259 MWh/year
Improved assembly process	Tsuruoka TDK	700 MWh/year

(2) Use of waste heat

Efforts to explore the possibility of utilizing waste heat led to this topic.

Energy conservation measure	Plant	Effect
Use of waste heat from furnaces	Shizuoka	239 MWh/year

(3) Improvements in control methods

Greater fluid volume has been achieved by replacing fluid devices with inverters.

Energy conservation measure	Plant	Effect
Installation of inverter water supply/drainage blowers	Akita	156 MWh/year
Controls on number of industrial water pumps	Kofu	110 MWh/year
Installation of inverter dust-collecters	Chokai	370 MWh/year

Reductions in Greenhouse-Effect Gases

TDK's former goal was to achieve a 60% reduction in perfluorocarbon (PFC) emissions in comparison to fiscal 1995 levels by 2010. As a result of improvements in our purification processes, however, we succeeded in achieving a 73.0% reduction in fiscal 1999, thus meeting our former goal ahead of schedule. We therefore set a new goal of achieving an 80% reduction. In fiscal 2000 PFC emissions increased in response to production increases; in the meantime we are continuing to explore the possibility of using other materials as substitutes for the PFCs used in product assessments.

PFC Emissions (Unit: tons)

Note: Total of TDK parent and domestic consolidated subsidiaries' product and development bases.

1995	1996	1997	1998	1999	2000
(2.15)*		2.15	1.32	0.58	1.19

* Under the 1997 Kyoto Protocol, 1995 was designated as the base year with respect to PFC emissions. According to a survey by the Electronic Industries Association of Japan, in 1997 the volume of produced items that involved processes that utilize PFC was virtually the same as in 1995. Consequently, the association considered PFC emissions in 1997 to be the same as in 1995. TDK began surveys in 1997, and accordingly, considers its 1997 PFC emissions to be the same as in 1995.

Controlling Chemical Substances

Setting Voluntary Standards for Controlling Chemical Substances

In 1996 TDK established and put into practice standards for controlling chemical substances. In accordance with regulatory trends and the relative potential for harm, TDK's standards divide chemical substances into three categories: prohibited substances, restricted substances, and controlled substances.

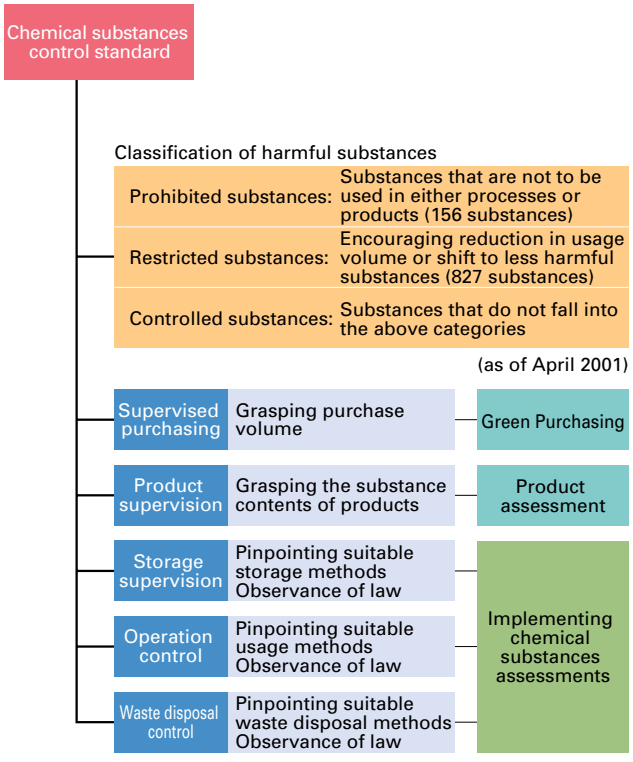
TDK revises the substances addressed by these standards when appropriate, subject to the enactment and revision of legal controls. In 1998 we established more specific classifications for substances within the categories of prohibited substances and restricted substances, respectively, in light of risks associated with disclosure and concerns over environmental protection. This is reflected in the selection of chemical substances subject to investigation when included in products to be procured under green purchasing policies, and is also reflected in the items evaluated in product assessments.

As part of its effort to control chemical substances, TDK initiated a Chemicals Search System in December 1998. The system, to which every employee has access, is contributing to the establishment of a uniform company-wide system for the control of chemical substances.

When the use of prohibited substances cannot be avoided, as in research and development activities, TDK's Safety and Environment Office conducts a strict investigation. Even when the office approves the use of such a substance, approval must be renewed annually and is linked not only to the improvement of controls in the workplace but also to advancing the development and introduction of substitute technologies and substances.

As a result of these efforts, TDK abolished the use of trichloroethylene and tetrachloroethylene in manufacturing processes in August 1998. We will continue to improve our controls in the future, eschewing the use of extremely harmful chemical substances.

Outline chart of chemical substances control system



Chemicals Search System

Pollutant Release and Transfer Registers (PRTR)

Making Doubly Sure of Compliance with PRTR

Since 1998, TDK has voluntarily participated in a survey on Pollutant Release and Transfer Registers (PRTR) conducted under the auspices of the Federation of Economic Organizations. We have held company-wide explanatory sessions and taken other steps to make doubly sure we will be in compliance with Japan's Pollutant Release and Transfer Registers Law, which have taken effect in April 2001. Figures on the respective amounts of air, water, and soil emissions containing substances addressed by the PRTR Law, along shown the quantities of constituent waste substances, are shown in the table below.

We are committed to the goal of reducing the overall volume of our emissions of chemical substances by 20%, relative to 1997 levels, by fiscal 2005. In fiscal 2000, we have already achieved reduction of 9.0%.

Working toward the Complete Elimination of Methylene Chloride

TDK uses methylene chloride in the cleansing of parts. It has been pointed out that methylene chloride is a harmful substance capable of damaging the human central nervous system. For this reason, TDK set a goal of completely eliminating methylene chloride emissions by March 2001 and has promoted a transition to a substitute cleansing agents and the elimination of detergents. In fiscal 2000 the use of methylene chloride was eliminated at another six plants, but this has not been achieved at the remaining nine plants, due to outstanding problems with product quality. In the future every effort will be made to eliminate the use of methylene chloride at these plants as well, enabling TDK to completely eliminate the use of methylene chloride by September 2001.

Amounts of chemical substances covered by the PRTR law handled in TDK (Unit: tons)

	Fiscal 1997				Fiscal 1999				Fiscal 2000			
Number of locations	28				28				28			
	Amount handled	Amount discharged *2	Waste	Recycled	Amount handled	Amount discharged *2	Waste	Recycled	Amount handled	Amount discharged *2	Waste	Recycled
Toluene	2351.5	603.7	371.6	1376.2	1393.2	434.4	177.7	700.1	1307.1	460.9	466.0	380.2
Barium and water-soluble barium compounds	8.2	0.0	0.3	0.0	21.3	0.0	0.4	0.2	108.6	0.0	30.4	0.0
Methylene chloride	838.2	674.5	111.1	52.6	1027.8	831.5	104.7	91.6	979.5	688.0	208.7	82.8
Nickel compounds	693.3	0.0	37.1	0.0	674.4	0.0	59.3	6.9	771.6	2.6	70.8	32.6
Water-soluble copper salts (other than complex salts)	60.4	0.0	6.5	0.0	58.7	0.0	6.0	0.0	1.3	0.0	1.3	0.0
Lead and lead compounds	281.9	0.1	17.1	51.6	231.5	0.0	39.2	24.2	154.6	0.0	29.8	13.0
Trichloroethylene	80.0	60.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Xylene	70.0	24.0	34.0	0.0	64.9	21.5	15.9	8.4	157.9	54.5	74.5	28.9
Cobalt and cobalt compounds	61.8	0.0	4.1	0.0	243.9	0.0	8.6	202.1	302.1	0.0	3.2	191.4
Silver and water-soluble silver compounds	28.6	0.0	0.6	0.0	15.1	0.0	0.0	3.8	23.3	0.0	0.3	3.5
Chromium and trivalent chromium compounds	53.3	0.0	0.0	9.8	30.3	0.0	9.0	0.0	27.0	0.0	0.6	1.2
Tetrachloroethylene	13.0	10.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diglycidyter of bisphenol A *1	-	-	-	-	55.0	0.0	4.0	0.0	59.3	0.0	12.2	0.0
Manganese and manganese compounds	4282.5	0.0	0.5	0.0	5003.6	0.0	27.1	145.3	3903.4	0.0	16.2	205.4
Vanadium pentoxide	4.7	0.0	0.0	0.1	4.7	0.0	0.0	0.1	2.9	0.0	0.6	0.1
Boron and boron compounds	0.0	0.0	0.0	0.0	23.0	0.0	0.1	2.6	25.4	0.3	0.9	6.8
Dimethylformamide	0.0	0.0	0.0	0.0	1.5	0.8	0.7	0.0	2.4	1.2	0.0	1.2
Di-amino ethanol *1	-	-	-	-	-	-	-	-	5.0	0.9	3.3	0.0
Ethylene glycol *1	-	-	-	-	-	-	-	-	13.3	9.1	4.2	0.0
Hydrazine *1	-	-	-	-	-	-	-	-	1.0	0.0	1.0	0.0
Di-n-butyl phthalate *1	-	-	-	-	-	-	-	-	5.9	4.0	1.9	0.0
n-butyl phthalate = benzyl *1	-	-	-	-	-	-	-	-	39.3	26.8	12.5	0.0
Water-soluble zinc compounds *1	-	-	-	-	-	-	-	-	49.3	0.0	0.0	0.0
Total	8827.3	1372.3	605.9	1490.3	8848.8	1288.2	452.7	1185.2	7940.2	1248.3	938.4	947.1
Compared to fiscal 1997	100.0%	100.0%	100.0%	100.0%	100.2%	93.9%	74.7%	79.5%	90.0%	91.0%	154.9%	63.6%

Notes: · Surveys were conducted at the production and R&D bases of TDK and its domestic consolidated affiliates. The scope of chemical substances subject to the surveys was in accordance with the PRTR Law.
· Volumes handled and emissions volumes were calculated by making reference to the PRTR Guidelines for Electrical and Electronic Industries, with calculations carried out from activities under the Environmental Management System.

*1: TDK began totaling figures for diglycidyter of bisphenol A as well as di-amino ethanol in fiscal 1999.
*2: Total including air, water, and soil emissions

Preserving the Earth's Environment

Effective Use of Water Resources

TDK uses water at its various plants in cleansing processes and as a coolant for plant equipment. The following describes some of our efforts to utilize our water resources effectively.

At the Kofu Plant, groundwater was used as a coolant in the past, but when new equipment was installed the company started recycling water throughout the system and using purified water as a coolant. This reduced the use of groundwater by as much as 140,000m^3 per month. At the Narita Plant, a trial switch to the use of recycled water as a coolant for furnaces led to a reduction of 300m^3 per month. At the Technical Center, waste water generated by processing is used as a coolant in the building's air-conditioning system, and at the Shizuoka Plant, waste water is generated by processing is used as a rinsing agent and as a coolant for production equipment. In these and other ways, TDK is striving to utilize water resources effectively.

Cooling water circulating machine for furnace at Narita Plant

Containers and Packaging

TDK is complying with Japan's new Law for Promotion of Sorted Collection and Recycling of Containers, which went effect on an expanded basis in April 2000. We are promoting the reduction and reuse of various types of container and packaging materials. In addition, in accordance with the revised Law for the Promotion of Utilization of Recycled Resources, which went into effect in April 2001, businesses are required to separately identify paper and plastic materials, and TDK is ensuring that its recording media products, which the new law addresses, are in compliance.

Identification emblems

Efforts at the Distribution Stage

At the Mikumagawa Plant, railway containers are used to transport plastic containers to recycling firms. These results in a smaller volume of CO_2 emissions than would be the case if these materials were transported in trucks. For this reason, TDK is doing its best to minimize its reliance on trucks and reuse packages at respective facility.

Eliminating Incinerators

As part of its arrangements for appropriate waste disposal, TDK has incinerators for the disposal of combustible waste generated by its factories. In light of the emergence of the dioxin problem, however, we began shutting down these facilities, eventually eliminating all incinerators in Japan in February 2001. The following is a numerical breakdown.
Small-scale incinerators: 5
Facilities subject to the law on special measures to combat dioxin: 6

Storage and Management of PCB-related Machinery

Since 1972, when measures were adopted banning the manufacture of machinery that uses polychlorinated biphenyl (PCB), TDK has been storing and managing machinery that uses PCB, in accordance with the Waste Disposal and Public Cleansing Law.

As of March 2001, 77 capacitors and 147 fluorescent lighting stabilizers were being held in storage in Japan. Every effort is being made to ensure storage that is completely secure storage, and management, including the use of specialized storage containers.

Fluorescent lighting stabilizing equipment in storage

Compliance with Environmental Laws and Regulations

At TDK, compliance with environmental laws and regulations is an absolute minimum prerequisite. As part of our environmental management system, we scrupulously comply with emissions regulations and carefully attend to all relevant notifications, reports, and records.

TDK's domestic facilities are in compliance with the legal standards in each environmental category, including air and water quality standards, so there are no problems in this regard for fiscal 2000. We will continue to uphold these standards in the future, improving our monitoring and measurement activities and periodically inspecting and upgrading the relevant equipment.

Soil Clean-up

One of TDK's plants is taking steps to clean up organochlorine solvents. As the concentration of contamination decreases, the pace of the clean-up slows, and the effort has not yet reached a conclusion. Additional new measures are currently being considered.

In addition, it has become apparent that disposed raw materials have been buried at a TDK plant in the past. An investigation detected the presence of arsenic, at a concentration of 0.04 mg per liter for water and 0.013 mg per liter in soil at the site of a trial excavation. The environmental standards for arsenic are 0.01 mg per liter. No contamination was detected in the surrounding area, but in order to prevent the possibility that contamination could spread, the buried waste has been excavated and disposed of.

(Note: The standard for waste water is 0.01 mg per liter)

Environmental Activities Overseas

Worldwide Activities

TDK is steadily proceeding with environmental protection activities overseas as well, including efforts to obtain ISO 14001 certification for its overseas plants. Twelve of these plants had already secured ISO 14001 certification by fiscal 1999, and four more obtained certification during fiscal 2000. At other plants, however, delays arose due to transfer of control over manufacturing processes caused by production modifications. ISO 14001 certification for these remaining plants is scheduled to be obtained by December 2001.

Training in-house auditors

Zero Emissions Achieved at TRE

TDK Recording Media Europe S.A. (TRE) has been a leader in environmental activities, a fact that was recognized when the Luxembourg Chamber of Commerce conferred an environmental protection award on TRE in 1998. During fiscal 2000 TRE worked to prevent airborne emissions of tetrafluoropropane, which is generated by CD-R manufacturing processes, and also made efforts to reuse diacetone alcohol and polycarbonates. As a result of all these efforts, TRE succeeded in achieving zero emissions in August 2001. This is considered highly beneficial to business activities, not only in relation to environmental concerns but also as an effective way of reducing costs. TRE will continue to work to reuse materials and resources in the future.


Equipment designed to absorb and neutralize gas


Waste matter can be used as structural material added to concrete.

TCU Receives American Environmental Award

TDK Components U.S.A., Inc. (TCU) not only complies with environmental laws and regulations but also reuses the methanol utilized in manufacturing processes and has managed to reduce its emissions of contaminants generated by the plating process. These voluntary efforts have been recognized by the U.S. Environmental Protection Agency (EPA), which gave TCU an award for meritorious service on behalf of the environment in December 2000.

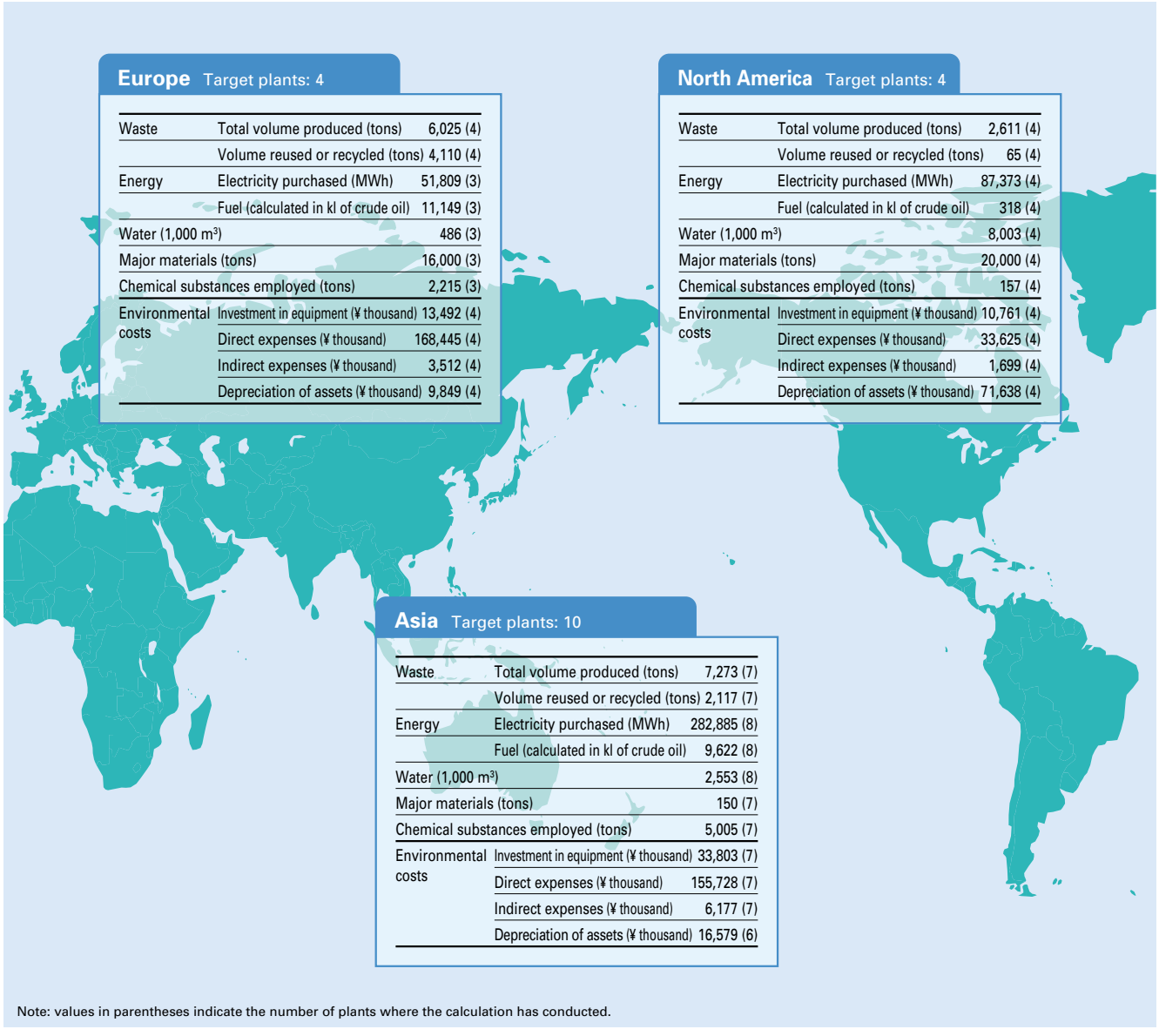

TDK Components USA, Incorporated

TCU has been accepted the National Environmental Achievement Track

Environmental Burdens and Costs at Overseas Manufacturing Plants

The percentage of TDK products manufactured overseas increases virtually every year, having risen to 56.8% in fiscal 2000. The company conducted a survey of air and water quality at its overseas plants in fiscal 1999, and data on the environmental burdens at some of these plants appeared in TDK's Environmental Report 2000. In fiscal 2000, information was compiled on not only air and water quality but also waste matter, energy usage, chemical substances, and environmental costs. The findings are presented below.

TDK will continue to improve and modify the content of its surveys in the future, so that the findings can be utilized to develop a more global approach to environmental management.



Europe Target plants: 4

Waste	Total volume produced (tons)	6,025 (4)
	Volume reused or recycled (tons)	4,110 (4)
Energy	Electricity purchased (MWh)	51,809 (3)
	Fuel (calculated in kl of crude oil)	11,149 (3)
Water (1,000 m³)		486 (3)
Major materials (tons)		16,000 (3)
Chemical substances employed (tons)		2,215 (3)
Environmental costs	Investment in equipment (¥ thousand)	13,492 (4)
	Direct expenses (¥ thousand)	168,445 (4)
	Indirect expenses (¥ thousand)	3,512 (4)
	Depreciation of assets (¥ thousand)	9,849 (4)

North America Target plants: 4

Waste	Total volume produced (tons)	2,611 (4)
	Volume reused or recycled (tons)	65 (4)
Energy	Electricity purchased (MWh)	87,373 (4)
	Fuel (calculated in kl of crude oil)	318 (4)
Water (1,000 m³)		8,003 (4)
Major materials (tons)		20,000 (4)
Chemical substances employed (tons)		157 (4)
Environmental costs	Investment in equipment (¥ thousand)	10,761 (4)
	Direct expenses (¥ thousand)	33,625 (4)
	Indirect expenses (¥ thousand)	1,699 (4)
	Depreciation of assets (¥ thousand)	71,638 (4)

Asia Target plants: 10

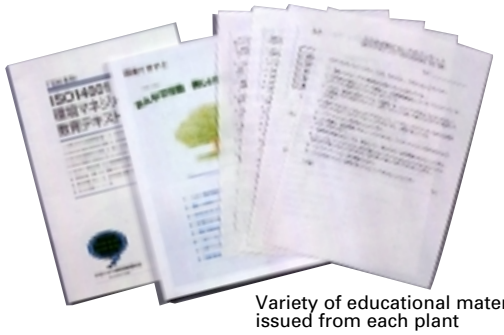
Waste	Total volume produced (tons)	7,273 (7)
	Volume reused or recycled (tons)	2,117 (7)
Energy	Electricity purchased (MWh)	282,885 (8)
	Fuel (calculated in kl of crude oil)	9,622 (8)
Water (1,000 m³)		2,553 (8)
Major materials (tons)		150 (7)
Chemical substances employed (tons)		5,005 (7)
Environmental costs	Investment in equipment (¥ thousand)	33,803 (7)
	Direct expenses (¥ thousand)	155,728 (7)
	Indirect expenses (¥ thousand)	6,177 (7)
	Depreciation of assets (¥ thousand)	16,579 (6)

Note: values in parentheses indicate the number of plants where the calculation has conducted.

Employee Education

EMS-based Training

In order to be able to respond to environmental problems, each individual employee must have a breadth of knowledge and be able to translate that knowledge into action in his or her own respective role. To this end, the Environmental Management System at TDK plants incorporates both broad-based training for general employees and specialized training for individuals in specific positions. Through this approach to training, we are striving to ensure that each individual will work for more effective environmental protection activities.



Variety of educational materials issued from each plant

Environmental Lectures

In order to get our employees thinking about what they can do for the environment in the future, TDK held an environmental lecture event in October 2000. Noted speakers were invited to deliver lectures on environmental activities, and participants were presented with the latest information on environmental issues.

Environmental lecture event

Effective Use of Our Intranet

Each of TDK's plants is equipped with an intranet that features an environmental bulletin board service, which can be used to get information about environmental activities at the plant, create electronic environmental manuals, and quickly find answers to questions related to the environment. In addition, the Safety & Environment Office at company head office posts information on company-wide environmental activities, details on revisions to relevant laws, and other such information, so these intranets effectively serve the entire company.

Effectively using the intranet

Company-wide Informational Venues

In order to enable informational activities at each plant to reach a company-wide audience, TDK publishes an environmental newsletter called *TDK ECOPLUS*, containing information on company-wide trends, environmental activities at individual plants, and current topics related to the environment. In addition, the *TDK Times*, the company magazine, also features photographs related to environmental issues and presents information to help TDK employees maintain an environmental awareness.

TDK ECOPLUS

TDK Times

Community Activities

TDK has adopted "good corporate citizenship" as a fundamental principle, since no company can grow without the cooperation of local and international communities. Based on this principle, TDK plants engage in a variety of communications activities and activities aimed at contributing to the local community.

Cassette Tapes for the Japan Wild Bird Association

The Japan Wild Bird Association, together with MITSUBISHIESTATE Co., Ltd, released a cassette tape, entitled "Tidings from Wild Birds and Nature," in August 2000. The tape is designed to enable people with visual disabilities to experience and enjoy the sound of bird songs while listening to information about the natural world. This effort is a community service, for which TDK donated the cassette tapes used for the project. The finished tapes have been distributed free of charge to schools for the blind, braille libraries, and other such institutions nationwide.

Periodic Afforestation and Clean-up Activities

TDK employees take part in clean-up campaigns around TDK plants and efforts to make these areas more visually appealing, as well as efforts to beautify rivers and sea coasts in neighboring

Afforestation activities on Mt. Hirao in Nagano Prefecture

The monthly clean-up campaign at the Kofu Plant

Activities to Encourage Local Solidarity

TDK has a number of plants in Akita Prefecture. These plants have taken a leading role in environmental protection efforts, by, among other ways, quickly obtaining ISO 14001 certification, and have actively contributed to their communities. These highly regarded efforts have won TDK's Akita plants an environmental award from Akita Prefecture.

(1) The plants participate every year in the activities of a group dedicated to planting Japanese beech trees on Mt. Chokai. This effort, which dates to the group's founding in 1994, is just one of the volunteer activities in which the Akita plants are involved. The group planted 10,000 trees in 1999 and another 2,026 tree at its tree planting festival in October 2000.

(2) Plant employees take part voluntarily in clean-up campaigns in local coastal areas.

(3) The plants promote TDK's environmental activities and actively assist local businesses in obtaining ISO 14001 certification.

TDK colleagues play active parts in rebirth of Japanese beech trees.

Public relations activity of Honjoyuri Techno Network

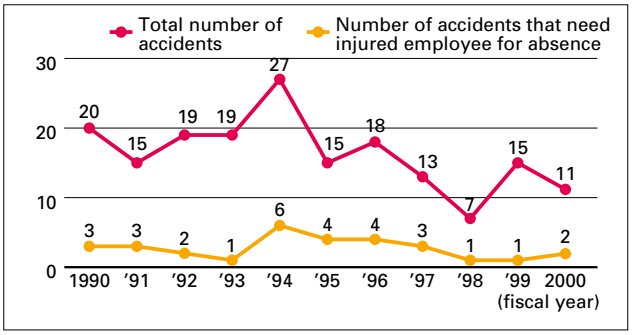
Volunteers actively cleaning up Nikaho

Industrial Safety and Health

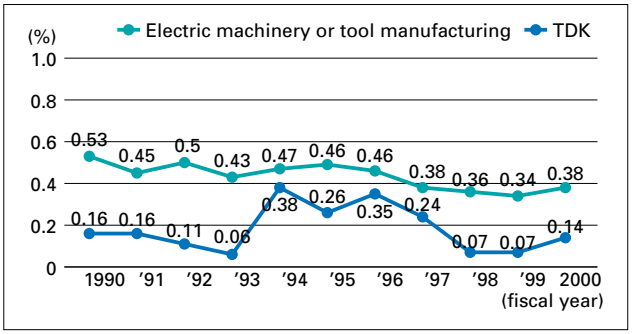
Trends in the Occurrence of Accidents

The following graphs show trends in the occurrence of workplace accidents at TDK. Recently, there has been a decline in the occurrence of production-site accidents involving machinery. The types of accidents occurring have diversified, with more incidents taking place away from the production site, such as collisions in parking lots and on company roadways.

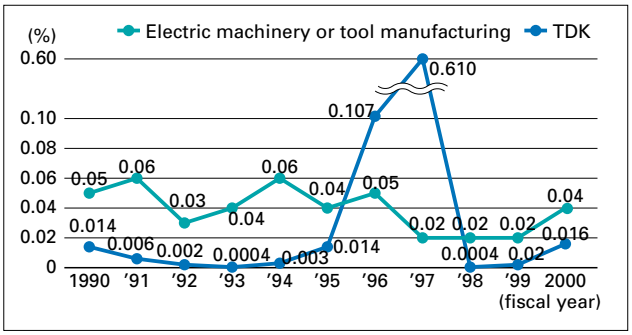
Trends in the occurrence of accidents
(Total numbers of incidents occurring at TDK facilities)



Percentages of injured employee for absence



Severity rate



Major Health and Safety Activities

Each TDK plant conducts monthly Safety-day Check and semiannual health and safety self-checks as ways of improving health and safety in the workplace. In addition, efforts are made to improve safety awareness in the workplace, such as the holding of classes whenever necessary in response to the occurrence of accidents.

In the Akita district, classes are held every year under the supervision of the local police from January through February to provide employees with hands-on guidance for coping with icy roads. The program, which includes training in how to handle skids and how to brake on ice, and offers hands-on collision experience, has received enthusiastic reviews from participants.

Orientation for handling organic solvents

Hand-on guidance for driving on freezing roads.

The Occupational Health and Safety Management System

Convinced that an Occupational Health and Safety Management System (OHSMS) would be an effective way to further reduce the likelihood of workplace accidents, TDK decided to introduce this system in July 2000. This uniform, company-wide system is being created in accordance with Occupational Health and Safety Assessment Series (OHSAS) 18001 standards. During fiscal 2000, TDK devised methods for initiating the system and conducting the necessary training, formulated specific methods for handling the legal requirements that are vital components in the makeup of the OHSMS, and prepared evaluation standards for use in risk assessment. Manuals will be compiled, regulations will be established, and various types of training will be conducted to ensure that the system is launched smoothly.

Chronology of TDK's Environmental Protection Efforts

1970	Waste water treatment technology developed at Corporate Research and Development Center
	Coherence treatment using ferrite electrodes
1975	Environmental protection group set up
	Company-wide administration on environmental protection launched
1976	Environmental protection structure set up, consisting of production technology division, environmental safety section (head office), and business group organization
1978	Administrative regulations formulated for safety and environmental protection (In 1987, separate administrative regulations were formulated for environmental protection.)
1980	Environment diagnosis launched at head office (In 1986, the program was changed to annual self-diagnosis on environmental protection with head office observers.)
1987	Energy-saving strategy office set up
1990	Environmental protection manual published
	Safety and hygiene manual published
	Energy-saving manual published
1992	Office for environmental protection measures set up to cope with global environmental problems
1993	TDK Environmental Voluntary Plan drawn up (The plan was revised in 1995 and overseas distribution added)
1995	Safety & Environment Office set up
	Application for ISO 14001 certification authorized
1996	Unified management of chemical substances launched
1997	ISO 14001 certification obtained by Mikumagawa Plant, first in TDK group
1998	ISO 14001 certification obtained by all TDK parent facilities
	Complete elimination of trichloroethylene and tetrachloroethylene
1999	Product assessment launched in domestic facilities
	Green purchasing launched in domestic facilities
	Inauguration of Lead-free Project
	TDK Environmental Report 1999 published
2000	Zero Emissions Project launched
	Acquisition of ISO 14001 certification by all production and R&D bases in the domestic TDK Group completed
	Debut of the in-house environmental newsletter *TDK ECOPLUS*
	Publication of *TDK's Environmental Report 2000*
2001	February: Elimination of incinerators (at domestic manufacturing plants)
	March: Publication of the *TDK Green Purchasing Guide (Office Edition)*
	March: Technical development completed for lead-free soldering
	April: Start of trial introduction of environment accounting

Information Disclosure

TDK presents information on its environmental protection activities through its environmental reports, via newspapers, and by many other means. We endeavor to respond to the views and questions of all our "stakeholders" (this includes everyone who is connected to our corporate activities) and to engage in two-way communication.

TDK TechnoForum 2000

An event called TDK TechnoForum 2000 was held at the Technical Center in May 2000. At this event TDK introduced environmentally friendly products and promoted its environmental efforts.

TDK TechnoForum 2000

Environmental advertising

In order to achieve a wider understanding of TDK's environmental activities, TDK conducts advertising activities and prepares advertisements that are carried by various media venues.

The Japan Industrial Journal
as of 21 September,2000

Nikkei Ecology
as of September, 2000

Environmental report

TDK publishes an annual environmental report, which has been issued every year since the publication of the fiscal 1999 issue. In order to respond to economic globalization, the report is published in English as well as Japanese.

Web site

TDK's annual environmental report in available online at TDK's Web site, which also offers links to a number of major environmental Web sites, making these sites accessible to more people. We intend to continue to improve our Web site in the future, presenting information on topics of interest and local activities.

Results of *TDK's Environmental Report 2000* survey

Thank you for your replies.

1. How do you feel about TDK's environmental activities?	Favorably impressed	92%	Neutral	8%	Not impressed	0
2. What is your impression of *TDK's Environmental Report 2000*?	Good	92%	So-so	8%	Bad	0
3. Do you think *TDK's Environmental Report 2000* presents an appropriate amount of information?	Too little	8%	Appropriate	84%	Too much	8%
4. Did you find *TDK's Environmental Report 2000* easy to read?	Easy to read	83%	So-so	17%	Hard to read	0

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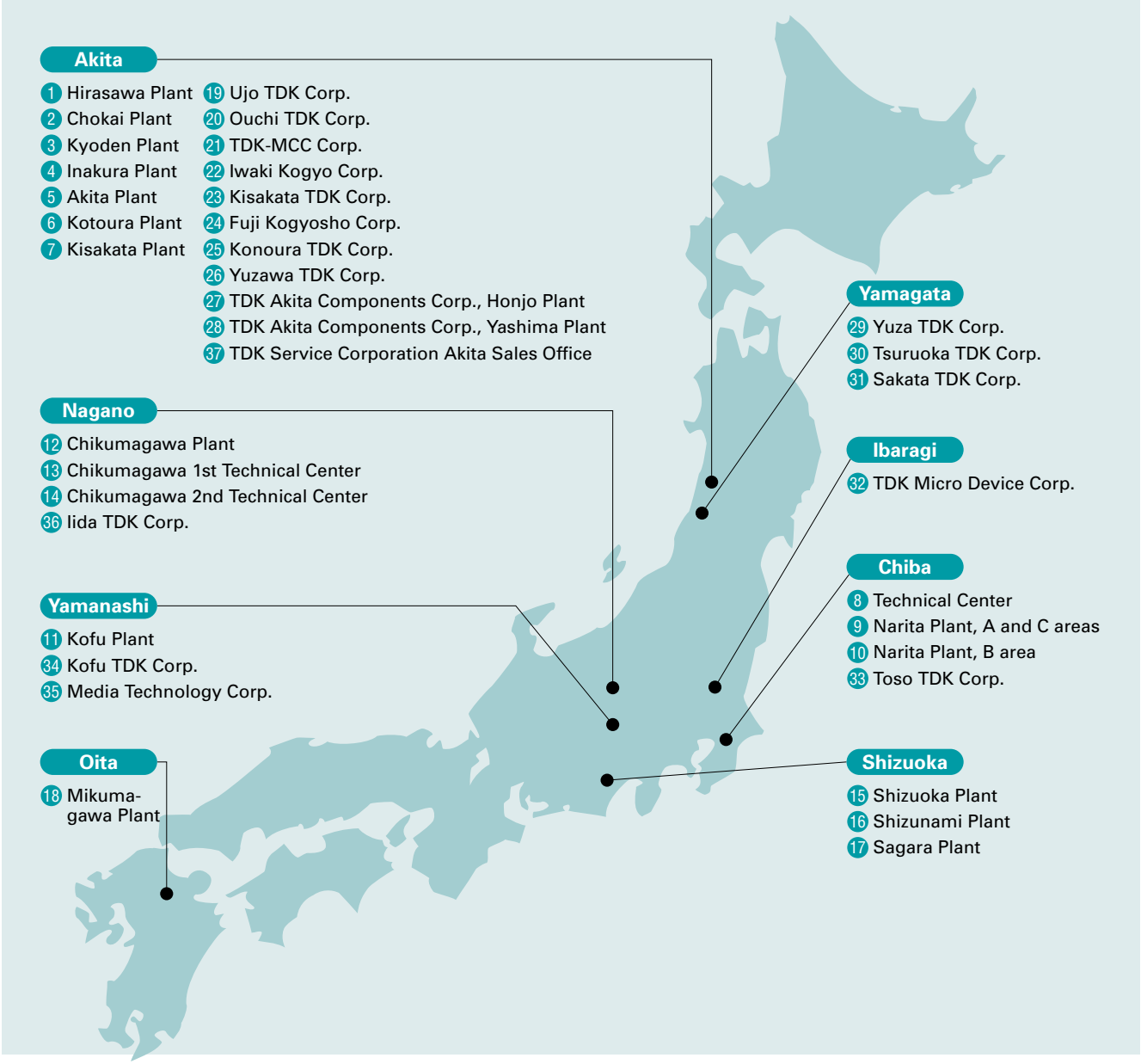

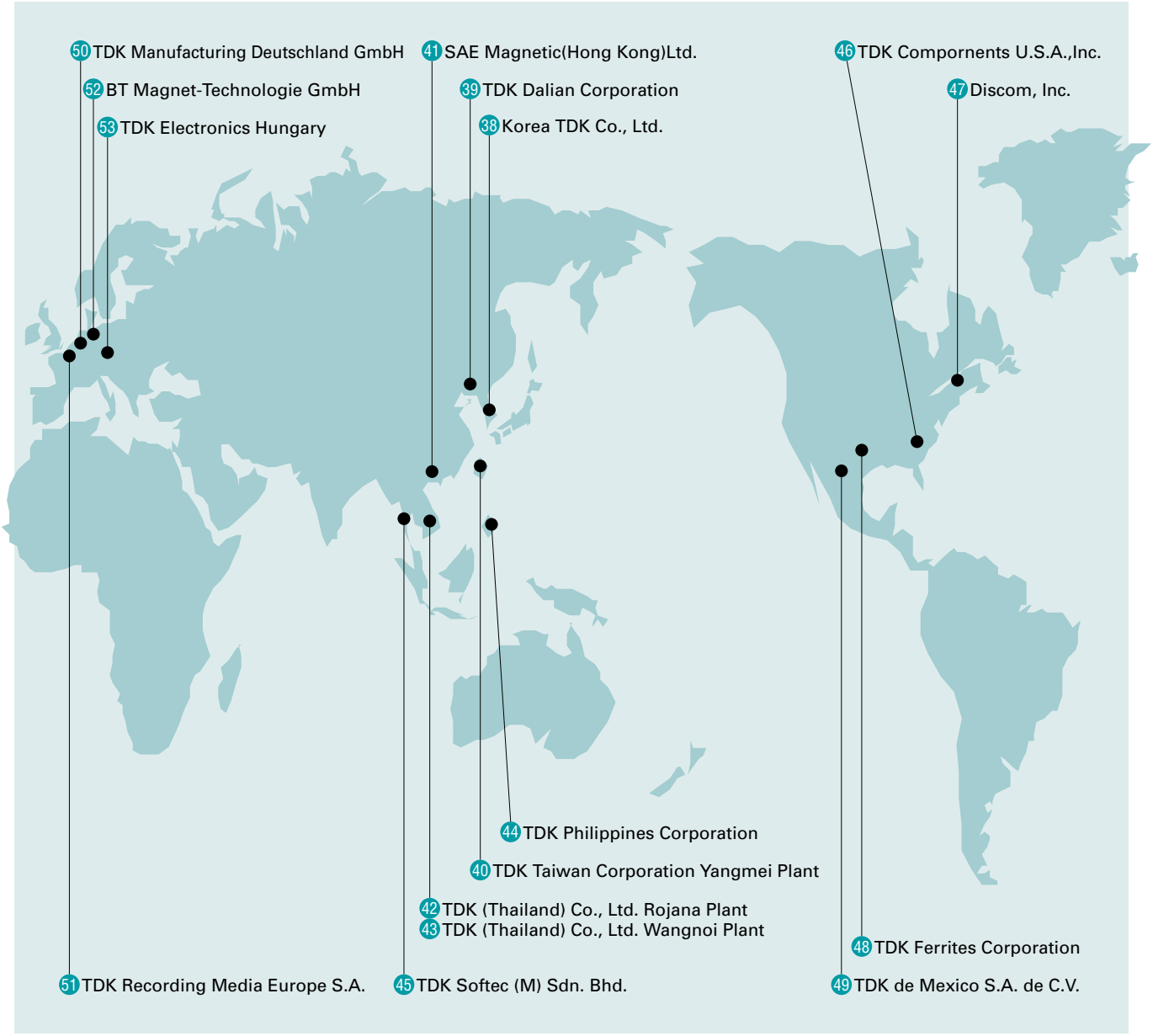

Major Categories of Environmental Burden Produced by TDK *1

			Unit	Fiscal 1998	1999	2000
TDK Corporation	Raw material procurement	Principal raw materials *2	ton	55,000	52,000	49,000
	Raw energy procurement	Water *3	1000m³	3,654	3,498	3,512
		Electricity *4	MWh	440,767	455,591	449,710
		Fuel *5	kl	42,007	44,022	44,208
	Amount of environmental burden produced	Waste water *6	1000m³	-	2,969	3,056
		BOD *7	kg	-	6,584	9,741
		SS *7	kg	-	5,405	7,758
		Iron *7	kg	-	667	806
		Zinc *7	kg	-	261	180
		CO2 *8	ton-C	72,304	76,395	75,969
		NOx *9	ton	-	193	186
		SOx *9	ton	-	23	24
		Soot and dust *9	ton	-	12	4
	Amount of waste generated	Sludge	ton	20,152	18,244	21,764
		Waste oil	ton	11,848	9,964	7,206
		Waste plastic	ton	2,994	2,822	3,551
		Waste acid	ton	1,736	1,972	1,451
	Amount of waste recycled	Sludge	ton	4,450	6,030	7,077
		Waste oil	ton	10,433	9,126	6,468
		Waste plastic	ton	2,040	2,099	1,784
		Waste acid	ton	49	50	102
Domestic subsidiaries	Raw energy procurement	Water *3	1000m³	580	660	731
		Electricity *4	MWh	149,366	169,477	191,960
		Fuel *5	kl	12,718	13,863	18,320
	Amount of environmental burden produced	Waste water *6	1000m³	-	540	674
		BOD *7	kg	-	8,353	17,103
		SS *7	kg	-	6,709	8,017
		Iron *7	kg	-	138	138
		Zinc *7	kg	-	23	44
		CO2 *8	ton-C	23,774	26,913	32,491
		NOx *9	ton	-	171	286
		SOx *9	ton	-	8	10
		Soot and dust *9	ton	-	7	14
	Amount of waste generated	Sludge	ton	1,603	3,106	2,079
		Waste oil	ton	6,220	6,214	7,315
		Waste plastic	ton	2,769	2,933	3,582
		Waste acid	ton	194	202	240
	Amount of waste recycled	Sludge	ton	74	2	462
		Waste oil	ton	3,446	2,703	3,035
		Waste plastic	ton	821	1,131	2,184
		Waste acid	ton	0	0	0

*1: Total of product and R&D bases
*2: Calculated based on materials purchases.
*3: Includes water for industrial use and groundwater.
*4: The volume of electric power purchased (not including figures for electric power generated in-house using fuel)
*5: Figures are on a crude oil conversion basis calculated based on the enforcement ordinance of the Energy Conservation Law.
*6: For facilities listing no waste water emissions, the emission volume is considered to be the volume of water consumed.
*7: Calculated by the average of (the actual emisson) x (result of water quality test)
*8: Electric power and fuel converted to a CO2 conversion coefficients are the figures from the 1999 survey of the electric and electronic industry Voluntary Action Plan on the Environment.
*9: Calculated on the basis of the volume of used fuel. The volume of Nox and soot and dust is measured at smoke generating facilities.

Facilities with ISO 14001 Certification (As of April 30, 2001)

Domestic

Facility	Address	Certification date
Mikumagawa Plant	Hita City, Oita Prefecture	April 21, 1997
Yuzawa TDK Corp.	Yuzawa City, Akita Prefecture	October 17, 1997
Chokai Plant/Hirasawa Plant Inakura Plant/Kyoden Plant *1	Nikaho-machi, Yuri-gun, Akita Prefecture	Feburuary13, 1998
Narita Plant B area	Narita City, Chiba Prefecture	March 20, 1998
Narita Plant A and C areas	Narita City, Chiba Prefecture	March 20, 1998
TDK-MCC Corp.	Nikaho-machi, Yuri-gun, Akita Prefecture	April 27, 1998
Kofu Plant/Kofu TDK Corp.	Kosai-cho, Nakakoma-gun, Yamanashi Prefecture	June 5, 1998
Media Technology Corp.	Tamaho-cho, Nakakoma-gun, Yamanashi Prefecture	June 26, 1998
Akita Plant	Nikaho-machi, Yuri-gun, Akita Prefecture	June 29, 1998
Iida TDK Corp.	Iida City, Nagano Prefecture	July 17, 1998
Kisakata Plant	Kisakata-machi, Yuri-gun, Akita Prefecture	July 17, 1998
Chikumagawa Plant	Saku City, Nagano Prefecture	July 28, 1998
Chikumagawa Technical Center	Saku City, Nagano Prefecture	July 31, 1998
Iwaki Kogyo Corp.	Iwaki-machi, Yuri-gun, Akita Prefecture	September 11, 1998
Ujo TDK Corp.	Showa-machi, Minamiakita-gun, Akita Prefecture	September 14, 1998
Sakata TDK Corp.	Sakata City, Yamagata Prefecture	October 9, 1998
Kisakata TDK Corp.	Kisakata-machi, Yuri-gun, Akita Prefecture	November 4, 1998
Shizuoka/Sagara/ Shizunami Plants	Sagara-cho, Haibara-gun, Shizuoka Prefecture	November 20, 1998
Toso TDK Corp.	10 Midoridaira, Yokaichiba City, Chiba Prefecture	December 11, 1998
Technical Center	Ichikawa City, Chiba Prefecture	December 25, 1998
Konoura TDK Corp.	Konoura-machi, Yuri-gun, Akita Prefecture	January 4, 1999
Ouchi TDK Corp.	Ouchi-machi, Yuri-gun, Akita Prefecture	January 20, 1999
TDK Akita Components Corp.	Honjo City, Akita Prefecture	March 29 1999
Tsuruoka TDK Corp.	Tsuruoka, City, Yamagata Prefecture	April 21 1999
Yuza TDK Corp.	Yuza-machi, Yuza-machi, Akumi-gun, Yamagata Prefecture	June 1 1999
Kitaibaraki Site	Kitaibaraki City, Ibaraki Prefecture	April 23 2000
Head Office	Chuo-ku, Tokyo City	March 9, 2001

*1: Chokai/Hirasawa Plant and Inakura/Kyoden Plant united its respective certification into ones on 16 February, 2001.

Overseas

Facility	Nationality	Certification date
TDK(Malaysia)Sdn.Bhd.	Malaysia	1998. 4.17
TDK Compornents U.S.A.,Inc.*2	U.S.A	1999. 4.22
Korea TDK Co., Ltd.	Korea	1999. 6.19
TDK(Thailand) Co.,Ltd.	Thailand	1999. 8. 6
TDK Recording Media Europe S.A.	Luxembourg	1999.11. 4
TDK Electronics Corporation California Plant	U.S.A.	1999.11. 5
Discom, Inc.	U.S.A.	1999.11.17
TDK Taiwan Corporation Yangmei Plant	Taiwan	1999.12. 7
SAE Magnetics(H.K.) Ltd.	Hong Kong	1999.12.15
TDK Ferrites Corporation	U.S.A.	2000. 1.17
TDK Philippines Corporation	Philippines	2000. 2.23
TDK(Thailand) Co.,Ltd.Wangnoi Plant	Thailand	2000. 7. 7
TDK Electronics Hungary Ltd.	Hungary	2001. 2.14
TDK Xiamen Co.,Ltd.	China	2001. 3.28
TDK Dalian Corporate	China	2001. 4.29

*2: The certification of TDK Electronics Corporation Georgia Plant has been united with TDK Components U.S.A. on 12 February, 2001.

Fiscal 2000 Data by Facility

Hirasawa Plant

Location	15 Gashomen, Hirasawa, Nikaho-machi, Yuri-gun, Akita Prefecture
Production	Metal electrodes
Land	10,000 square meters
Premises	9,000 square meters
Completion	July 1940
Number of employees	710

Atmosphere (No facility subject to legal controls.)

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.0–9.0	7.4	6.9–7.9 *1
COD	60	11	30
SS	120	8	74
n-Hexane (Mineral oil)	5	ND	ND
Phenol	0.5	ND	ND
Copper	1	0.02	0.07
Zinc	5	0.12	0.91
Soluble iron	10	0.74	3.2
Soluble manganese	10	0.12	0.6
Fluorine	15	ND	ND
Cadmium	0.05	ND	0.005
Lead	0.1	ND	0.01

Unit: pH, nothing ;others, mg per liter pH: hydrogen ion exponent
COD: Chemical Oxygen Demand SS: Suspended Solids in wate ND means below the volume that can be detected.* 1: Minimum and maximum pH values

Substances covered by the PRTR Law (Total of Hirasawa, Chokai, Kyoden, Inakura Plant)

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	2.7	2.7	0.0	0.0
Nickel compounds	487.8	0.0	40.0	29.1
Lead and lead compounds	26.6	0.0	2.7	6.3
Xylene	1.4	1.4	0.0	0.0
Cobalt and cobalt compounds	2.7	0.0	0.4	0.3
Manganese and manganese compounds	3063.2	0.0	14.6	119.4

Unit: ton per year *1 Total including air, water, and soil emissions.

Chokai Plant

Location	15 Sannomori, Hirasawa, Nikaho-machi, Yuri-gun, Akita Prefecture
Production	Ferrite cores
Land	50,000 square meters
Premises	27,000 square meters
Completion	April 1970
Number of employees	Included in Hirasawa Plant

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boiler *4 (1 unit)	Kerosene	Sulfur oxides	2.8	ND
		Nitrogen oxides	180	48
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosine boilers are subjected to prefectural regulations.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.5	7.1–8.0 *1
BOD	160(120)	7	22
SS	120	7	22
n-Hexane (Mineral oil)	5	ND	1
Phenol	5	ND	0.1
Copper	1	0.02	0.12
Zinc	5	0.15	0.63
Soluble iron	10	0.88	3.1
Soluble manganese	10	0.09	0.14
Fluorine	15	ND	0.2
Number of coliform organisms	3000	517	950
Cadmium	0.05	ND	ND
Lead	0.1	0.01	0.09

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law (Included in Hirasawa Plant)

Kyoden Plant

Location	20 Kyoden, Hirasawa, Nikaho-machi, Yuri-gun, Akita Prefecture
Production	Ferrite cores
Land	39,000 square meters
Premises	25,000 square meters
Completion	July 1959
Number of employees	(Included in Hirasawa Plant)

Atmosphere (No facility subject to legal controls.)

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.5	7.1–7.9 *1
BOD	160(120)	ND	7
SS	120	5	30
n-Hexane (Mineral oil)	5	1.2	1.2
Phenol	5	ND	ND
Copper	1	ND	0.03
Zinc	5	0.41	3.5
Soluble iron	10	1.5	5.8
Soluble manganese	10	0.49	1.9
Fluorine	15	ND	ND
Number of coliform organisms	3000	ND	ND
Cadmium	0.05	ND	ND
Lead	0.1	0.01	0.02

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law (Included in Hirasawa Plant)

Inakura Plant

Location	4.3, Tateishi, Kisakata-machi, Yuri-gun, Akita Prefectrue
Production	Ferrite cores, toner, magnetic film products
Land	135,000 square meters
Premises	26,000 square meters
Completion	July 1982
Number of employees	(Included in Hirasawa Plant)

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Drying furnaces (10 units)	Kerosene	Sulfur oxides	4.25	ND
		Nitrogen oxides	230	33
		Soot and dust	0.2	0.11
Boilers *4 (2 units)	Kerosene	Sulfur oxides	4.1	ND
		Nitrogen oxides	260	76
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosine boilers are subjected to prefectural regulations.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.0–9.0	7.6	7.1–8.1 *1
COD	30	2	18
SS	70	ND	24
n-Hexane (Mineral oil)	5	ND	ND
Phenol	5	ND	ND
Copper	1	0.01	0.12
Zinc	5	0.23	0.9
Soluble iron	10	0.44	3.3
Soluble Manganese	10	0.24	1.6
Fluorine	15	ND	ND
Cadmium	0.05	ND	ND
Lead	0.1	ND	ND

Unit: pH, nothing ;others, mg per liter pH: hydrogen ion exponent
COD: Chemical Oxygen Demand SS: Suspended Solids in wate ND means below the volume that can be detected.* 1: Minimum and maximum pH values

Substances covered by the PRTR Law (Included in Hirasawa Plant)

Akita Plant

Location	200 Tachisawa, Hirasawa, Nikaho-machi, Yuri-gun, Akita Prefecture
Production	Ceramic raw materials
Land	65,000 square meters
Premises	36,000 square meters
Completion	December 1979
Number of employees	960

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (6 units)	LPG	Sulfur oxides	1.19	0.009
		Nitrogen oxides	150	120
		Soot and dust	0.1	0.01
Boiler *4 (1 unit)	Kerosene	Sulfur oxides	2.03	0.002
		Nitrogen oxides	260	67
		Soot and dust	0.3	ND
Diesel engines (2 units)	Grade-A heavy oil	Sulfur oxides	10.9	0.132
		Nitrogen oxides	950	920
		Soot and dust	0.1	0.02

*1: Units: Sulfur oxides, Nm³/h; nitrogen oxides, ppm; soot and dust, g/Nm³
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosine boilers are subjected to prefectural regulations.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	6.9	6.4–7.4 *1
BOD	30	5	6
SS	70	5	5
n-Hexane (mineral oil)	5	1.3	2.2
Phenol	5	0.1	0.1
Copper	1	0.01	0.03
Zinc	5	0.06	0.44
Soluble iron	10	0.09	0.54
Soluble manganese	10	0.02	0.27
Fluorine	15	0.2	0.2
Number of coliform organisms	3000	46	77
Cyanogen	0.1	0.02	0.02
Lead	0.1	0.01	0.03
1.1.1.Trichloroethane	3	0.001	0.001
Trichloroethylene	0.3	0.001	0.001
Tetrachloroethylene	0.1	0.001	0.001
Dichloromethane	0.2	0.02	0.02

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	74.2	41.5	32.6	0.0
Nickel compounds	94.2	0.0	0.0	0.0
Lead and lead compounds	72.3	0.0	0.5	0.0
Xylene	1.4	0.7	0.7	0.0
Silver and water-soluble silver compounds	9.9	0.0	0.0	0.0
Manganese and Manganese compounds	7.3	0.0	0.0	0.0
Water-soluble zinc compounds	49.3	0.0	0.0	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Kotoura Plant

Location	38 Furusato, Hirasawa, Nikaho-machi, Yuri-gun, Akita Prefecture
Production	Ceramic raw materials
Land	26,000 square meters
Premises	17,000 square meters
Completion	March 1953
Number of employees	Included in Akita Plant

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boiler (1 unit)	LPG	Sulfur oxides	1.01	ND
		Nitrogen oxides	150	82
		Soot and dust	0.1	ND
Boilers *4 (2 units)	Kerosene	Sulfur oxides	2.08	ND
		Nitrogen oxides	250	77
		Soot and dust	0.3	0.01

*1: Units: Sulfur oxides, Nm³/h; nitrogen oxides, ppm; soot and dust, g/Nm³
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosine boilers are subjected to prefectural regulations.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result (Kotoura SD Plant)		Actual result (Kotoura SD Plant)	
		Average	Maximum	Average	Maximum
pH	5.8–8.6	7.0	6.7–7.7 *1	7.3	6.8–7.9 *1
BOD	160(120)	5	11	5	17
SS	70	5	5	6	21
n-hexane (Mineral oil)	5	1	1	1.3	2.1
Phenol	5	0.1	0.1	0.1	0.1
Copper	1	0.01	0.02	0.01	0.03
Zinc	5	0.03	0.09	0.1	0.42
Soluble manganese	10	0.01	0.03	0.05	0.1
Fluorine	15	0.2	0.2	0.2	0.2
Number of coliform organisms	3000	341	500	57	140
Lead	0.1	0.01	0.02	0.01	0.01
1.1.1.Trichloroethane	3	0.001	0.001	0.001	0.001
Trichloroethylene	0.3	0.001	0.001	0.001	0.001
Tetrachloroethylene	0.1	0.001	0.001	0.001	0.001
Dichloromethane	0.2	0.02	0.02	0.02	0.02

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water *1: Minimum and maximum pH values

Substances covered by the PRTR Law (No subject)

Kisakata Plant

Location	1-1 Okinota, Kisakata-machi, Yuri-gun, Akita Prefecture
Production	Coils, machinery
Land	48,000 square meters
Premises	19,000 square meters
Completion	December 1959
Number of employees	540

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Heaters (2 units)	Grade-A heavy oil	Sulfur oxides	0.69	0.006
		Nitrogen oxides	180	80
		Soot and dust	0.3	ND
Boilers (2 units)	Grade-A heavy oil	Sulfur oxides	0.494	0.008
		Nitrogen oxides	180	57
		Soot and dust	0.3	ND
Boilers *4 (2 units)	Kerosene	Sulfur oxides	2.31	0.004
		Nitrogen oxides	260	60
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosine boilers are subjected to prefectural regulations.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.3	6.8–7.8 *1
BOD	30	ND	5
SS	70	ND	7
n-Hexane (Mineral oil)	5	0.6	1.5
Phenol	5	ND	0.1
Copper	1	ND	0.02
Zinc	5	0.02	0.08
Soluble iron	10	0.78	3.3
Soluble manganese	10	0.05	0.2
Total chromium	2	ND	0.02
Fluorine	15	ND	0.2
Number of coliform organisms	3000	10	30
Cyanogen	0.1	ND	0.02
Lead	0.1	ND	0.01
1.1.1.Trichloroethane	3	ND	ND
Trichloroethylene	0.3	ND	ND
Tetrachloroethylene	0.1	ND	ND
Dichloromethane	0.2	ND	ND

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Dichloromethane (Metylene Chloride)	3.5	3.5	0.0	0.0
Lead and Lead compound	1.0	0.0	0.0	0.8

Unit: ton per year *1 Total including air, water, and soil emissions.

Technical Center

Location	2-15-7 Higashi Owada, Ichikawa City, Chiba Prefecture
Development Center	
Land	33,000 square meters
Premises	55,000 square meters
Completion	September 1960
Number of employees	980

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (4 units)	City Gas	Nitrogen oxides	150	83
		Soot and dust	0.1	0.007

*1: Units: Nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Sewage Law, city regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.0–9.0	7.5	6.8–8.0 *1
BOD	600	ND	5
COD	-	5.2	9
SS	600	2.2	8.5
n-Hexane (Mineral oil)	5	ND	ND
Copper	1	0.02	0.02
Zinc	3	0.31	0.35
Soluble iron	5	0.09	0.11
Soluble manganese	5	0.01	0.02
Total nitrogen	60	4.2	5.5
Total phosphorus	8	0.9	1.59
Cadmium	0.01	ND	ND
Lead	0.1	ND	ND
1.1.1.Trichloroethane	3	ND	ND
Trichloroethylene	0.3	ND	ND
Tetrachloroethylene	0.1	ND	ND
Dichloromethane	0.2	ND	ND

Unit: pH, nothing; counts per cc; others, mg per liter pH: hydrogen ion exponent
BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand
SS: Suspended Solids in water ND means below the volume that can be detected
Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law (No subject)

Narita Plant, A and C areas

Location	570-2 Matsugashita, Minamihadori, Narita City, Chiba Prefecture
Production	Metal magnets, composite magnetic materials, magnet application products, power supply products, advanced information-network products, metal magnetic materials
Land	79,000 square meters
Premises	49,000 square meters
Completion	August 1978
Number of employees	810

Atmosphere (No facility subject to legal controls.)

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.6	7.1–8.0 *1
BOD	20	1.4	3.8
COD	160(120)	1.9	6.3
SS	40	ND	3
n-Hexane (Mineral oil)	3	ND	ND
Copper	1	ND	ND
Zinc	1	ND	0.2
Soluble iron	5	ND	ND
Soluble manganese	5	ND	ND

Unit: pH, nothing; counts per cc; others, mg per liter pH: hydrogen ion exponent
BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand
SS: Suspended Solids in water ND means below the volume that can be detected
Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	25.5	3.8	1.7	20.0
Dichloromethane (methylene chloride)	1.3	0.0	0.0	1.2
Cobalt and cobalt compounds	81.1	0.0	0.5	43.4
Boron and its compounds	18.1	0.0	0.1	5.8

Unit: ton per year *1 Total including air, water, and soil emissions.

Narita Plant B area

Location	570-1 Matsugashita, Minamihadori, Narita City, Chiba Prefecture
Production	Ferrite cores, microwave devices
Land	53,000 square meters
Premises	16,000 square meters
Completion	December 1980
Number of employees	310

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Roasting furnaces (2 units)	LPG	Sulfur oxides	-	ND
		Nitrogen oxides	220	135
		Soot and dust	0.15	0.043
		Chlorine	-	23
		Hydrogen chloride	-	72
Waste gas incinerator (1 unit)	Hydrogen	Sulfur oxides	-	ND
		Nitrogen oxides	150	59
		Soot and dust	0.1	0.009
		Chlorine	-	ND
		Hydrogen chloride	-	ND
Refine reaction tower (1 unit)		Soot and dust	-	0.004
		Chlorine	30	ND
		Hydrogen chloride	80	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3; chlorine and hydrogen chloride, mg/Nm^3 *2: Regulatory level values are based on the most severe value in the target facility. *3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.2	7.0–7.4 *1
BOD	20	0.8	2.5
COD	160(120)	1.5	3.2
SS	40	ND	1
n-Hexane (Mineral oil)	3	ND	1
Phenol	0.5	ND	ND
Copper	1	0.05	0.07
Zinc	1	ND	ND
Soluble iron	5	ND	0.3
Soluble manganese	5	ND	0.4
Total chromium	0.5	ND	ND
Fluorine	10	ND	ND
Number of coliform organisms	3000	ND	ND
Total nitrogen	120	1.2	1.2
Total phosphorus	16	ND	ND
Cadmium	0.01	ND	ND
Cyanogen	ND	ND	ND
Lead	0.1	ND	ND
Hexavalent chromium	0.05	ND	ND
Arsenic	0.05	ND	ND
Total mercury	0.0005	ND	ND
1.1.1 Trichloroethane	3	ND	ND
Trichloroethylene	0.3	ND	ND
Tetrachloroethylene	0.1	ND	ND
Dichloromethane	0.2	ND	ND
Carbon tetrachloride	0.02	ND	ND
Benzene	0.1	ND	ND
Selenium	0.1	ND	ND

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Manganese and manganese compounds	832.9	0.0	1.6	86.0
Vanadium pentoxide	1.1	0.0	0.0	0.1

Unit: ton per year *1 Total including air, water, and soil emissions.

Kofu Plant

Location	160 Miyazawa, Kosai-cho, Nakakoma-gun, Yamanashi Prefecture
Production	Various types of recording heads
Land	93,000 square meters
Premises	35,000 square meters
Completion	June 1982
Number of employees	590

Atmosphere (Air Pollution Control Law)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (2 units)	LPG	Sulfur oxides	3.05	ND
		Nitrogen oxides	150	110
		Soot and dust	0.1	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.1	6.9–7.3 *1
BOD	30(20)	6.8	12
COD	30(20)	3	5.5
SS	50(30)	1.6	4
n-Hexane (Mineral oil)	5	ND	ND
Copper	1	ND	ND
Zinc	1	ND	ND
Soluble iron	1	0.13	0.2
Soluble manganese	1	0.04	0.08
Fluorine	1	ND	0.5
Lead	0.1	ND	ND
1.1.1 Trichloroethane	3	ND	ND
Trichloroethylene	0.3	ND	ND
Tetrachloroethylene	0.1	ND	ND
Dichloromethane	0.2	ND	ND

Unit: pH, nothing; counts per cc; others, mg per liter pH: hydrogen ion exponent
BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand
SS: Suspended Solids in water ND means below the volume that can be detected
Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Nickel compounds	3.7	2.4	0.1	1.2
Xylene	33.4	4.6	0.0	28.9

Unit: ton per year *1 Total including air, water, and soil emissions.

Chikumagawa Plant

Location	113 Nenei, Saku City, Nagano Prefecture
Production	Optical disks
Land	110,000 square meters
Premises	54,000 square meters
Completion	December 1969
Number of employees	530

Atmosphere (Air Pollution Control Law)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (2 units)	Grade-A heavy oil	Sulfur oxides	16	0.11
		Nitrogen oxides	150	120
		Soot and dust	0.25	0.008

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, city regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.5	7.2–7.7 *1
BOD	20	2.8	18
COD	20	3.9	3.9
SS	30	2	6
n-Hexane (Mineral oil)	5	ND	ND
n-Hexane (Vegetable oil)	30	ND	ND
Phenol	5	ND	ND
Copper	3	ND	ND
Zinc	3	ND	ND
Soluble iron	10	ND	ND
Soluble manganese	10	ND	ND
Total chrome	1	ND	ND
Fluorine	15	0.14	0.14
Number of coliform organisms	3000	244	2400
Total nitrogen	120	9.4	9.4
Total phosphorus	16	1.4	1.4
Nickel	-	ND	ND
Cadmium	0.05	ND	ND
Cyanogen	0.5	ND	ND
Lead	0.1	ND	ND
Hexavalent chromium	0.3	ND	ND
Arsenic	0.1	ND	ND
Total mercury	0.003	ND	ND
1.1.1 Trichloroethane	3	ND	ND
Trichloroethylene	0.3	ND	ND
Tetrachloroethylene	0.001	ND	ND
Dichloromethane	0.2	ND	ND
Carbon tetrachloride	0.02	ND	ND
Benzene	0.1	ND	ND
Selenium	0.1	ND	ND
Nitrate, Nitrite-nitrogen	-	8	8
Boron	-	0.3	0.3

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	4.6	1.0	0.0	3.6
Dichlomethane (methylene chloride)	8.6	4.8	0.0	3.8
Cobalt and cobalt compounds	2.1	0.0	0.1	1.9
N,N-dimethylacetamide	2.4	1.2	0.0	1.2

Unit: ton per year *1 Total including air, water, and soil emissions.

Chikumagawa 1st Technical Center

Location	462-1 Otai, Saku City, Nagano Prefecture
Development Center	
Land	74,000 square meters
Premises	16,000 square meters
Completion	November 1983
Number of employees	120

Atmosphere (Air Pollution Control Law)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boiler (1 unit)	Grade-A heavy oil	Sulfur oxides	6.8	0.08
		Nitrogen oxides	180	41
		Soot and dust	0.3	0.002

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, city regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6.0–8.5	7.8	7.6–8.1 *1
BOD	20	1.3	2
SS	40	1.6	3
n-Hexane (Mineral oil)	5	1	1
n-Hexane (Vegetable oil)	5	ND	ND
Number of coliform organisms	3000	45	330

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Cobalt and cobalt compounds	65.8	0.0	1.0	61.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Chikumagawa 2nd Technical Center

Location	543 Otai, Saku City, Nagano Prefecture
Production	Thin-film heads
Land	95,000 square meters
Premises	23,000 square meters
Completion	June 1986
Number of employees	460

Atmosphere (Air Pollution Control Law)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boiler (1 unit)	Grade-A heavy oil	Sulfur oxides	7.4	0.06
		Nitrogen oxides	180	99
		Soot and dust	0.3	0.002

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, city regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6.0–8.5	7.2	6.8–7.5 *1
BOD	20	3.1	11
SS	40	1.5	3
n-Hexane (Mineral oil)	5	1	1
n-Hexane (Vegetable oil)	5	ND	ND
Phenol	5	0.02	0.02
Copper	3	0.08	0.15
Soluble iron	10	0.15	0.2
Fluorine	15	0.1	0.1
Number of coliform organisms	3000	ND	ND
Nickel	-	4.6	4.6

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Nickel compounds	3.9	0.0	2.6	1.3
Xylene	76.2	9.2	67.0	0.0
Boron and boron compounds	1.2	0.3	0.9	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Shizuoka Plant

Location	31-1Mekami, Sagara-cho, Haibara-gun, Shizuoka Prefecture
Production	Ferrite magnets
Land	58,000 square meters
Premises	21,000 square meters
Completion	May 1970
Number of employees	240

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Calcination furnaces (3 units)	Kerosene	Sulfur oxides	4.62	0.01
		Nitrogen oxides	220	170
		Soot and dust	0.15	ND
Calcination furnace (1 unit)	LPG	Sulfur oxides	4.48	0.02
		Nitrogen oxides	220	93
		Soot and dust	0.15	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, Pollution Control Agreement)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.3	6.9–8.5 *1
BOD	25(20)	2	4
COD	-	8.5	20
SS	40(30)	2	12
n-Hexane (Mineral oil)	5	0.4	0.9
Soluble iron	10	0.09	0.15
Number of coliform organisms	3000	90	90

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law (Total of Shizuoka, Shizunami, and Sagara Plant)

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Cobalt and cobalt compounds	11.4	0.0	0.2	0.0
Diaminoethanol	2.1	0.9	0.4	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Shizunami Plant

Location	712-1 Hosoe, Haibara-cho, Haibara-gun, Shizuoka Prefecture
Production	Ferrite magnets
Land	17,000 square meters
Premises	8,000 square meters
Completion	April 1979
Number of employees	150

Atmosphere (No facility subject to legal controls.)

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	7.4	7.1–7.8 *1
BOD	-	7	15
COD	-	48	82
SS	-	8	20
n-Hexane (Mineral oil)	-	ND	ND
Soluble iron	-	0.1	0.14
Number of coliform organisms	-	300	300

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law (Included in the data of Shizuoka Plant)

Sagara Plant

Location	117-1 Shirai, Sagara-cho, Haibara-gun, Shizuoka Prefecture
Production	Ferrite magnets
Land	32,000 square meters
Premises	8,000 square meters
Completion	August 1984
Number of employees	80

Atmosphere (No facility subject to legal controls.)

Water quality (Water Pollution Control Law, Pollution Control Agreement)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.6	6.8–7.9 *1
BOD	-	1	2
SS	40(30)	3	11
n-Hexane (Mineral oil)	5	0.3	0.6
Soluble iron	10	0.1	0.14
Number of coliform organisms	-	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine3
*1: Minimum and maximum pH values

Substances covered by the PRTR Law (Included in the data of Shizuoka Plant)

Mikumagawa Plant

Location	3-793-1 Ishii-machi, Hita City, Oita Prefecture
Production	Video and audio tapes
Land	100,000 square meters
Premises	33,000 square meters
Completion	May 1982
Number of employees	330

Atmosphere (Air Pollution Control Law, Pollution Control Agreement)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (2 units)	Grade-A heavy oil	Sulfur oxides	2	0.1
		Nitrogen oxides	180	120
		Soot and dust	0.1	ND
EGI *4 (2 units)	Organic solvent gas Grade-A heavy oil	Sulfur oxides	-	0.13
		Nitrogen oxides	200	46
		Soot and dust	-	0.08

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: EGI is a device to remove foul smell, installed in accordance with Pollution Control Agreement with Hita City.

Water quality (Water Pollution Control Law, Pollution Control Agreement)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.8	7.5–8.0 *1
BOD	120	0.7	1.2
SS	150	1	1
n-Hexane (Mineral oil)	5	0.5	0.6
n-Hexane (Vegetable oil)	30	0.5	0.8
Number of coliform organisms	3000	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine3
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	83.5	5.0	0.0	78.5
Cobalt and cobalt compounds	88.1	0.0	0.0	83.7
Chromium and trivalent chromium compounds	25.3	0.0	0.0	1.2

Unit: ton per year *1 Total including air, water, and soil emissions.

Ujo TDK Corp.

Location	50 Kamota, Ushiroseki, Midarehashi, Showa-machi, Minamiakita-gun, Akita Prefecture
Production	Multilayer chip capacitors, Medium and high voltage capacitors
Land	16,000 square meters
Premises	4,000 square meters
Completion	October 1968
Number of employees	140

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boiler *4 (1 unit)	Kerosene	Sulfur oxides	0.948	ND
		Nitrogen oxides	180	72
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosene boilers are subject to prefectural regulations.

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	7.1	6.9–7.3 *1
BOD	-	11	11
COD	-	5.9	5.9
SS	-	21	23
Number of coliform organisms	-	900	1800
Lead	-	ND	0.01
Dichloromethane	-	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	1.2	1.1	0.2	0.0
Dichloromethane (methylene chloride)	138.7	106.0	0.0	32.7
Lead and lead compounds	2.0	0.0	0.0	0.0
Silver and silver water-soluble compounds	1.3	0.0	0.0	0.1

Unit: ton per year *1 Total including air, water, and soil emissions.

Ouchi TDK Corp.

Location	146-1 Haraikawa, Sankawa, Ouchi-machi, Yuri-gun, Akita Prefecture
Production	Multilayer chip devices
Land	42,000 square meters
Premises	13,000 square meters
Completion	January 1970
Number of employees	430

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers*4 (4 units)	Kerosene	Sulfur oxides	1.5	ND
		Nitrogen oxides	260	92
		Soot and dust	0.3	ND
Cool and hot-water generators (2 units)	Kerosene	Sulfur oxides	1.55	ND
		Nitrogen oxides	260	54
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosene boilers are subject to prefectural regulations.

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	6.5	6.4–6.7 *1
BOD	-	13	16
SS	-	8	10
n-Hexane (Mineral oil)	-	ND	ND
n-Hexane (Vegetable oil)	-	ND	ND
Phenol	-	ND	ND
Copper	-	0.03	0.05
Zinc	-	0.42	0.54
Soluble iron	-	0.2	0.38
Soluble manganese	-	0.06	0.08
Number of coliform organisms	-	33	100
Total phosphorus	-	0.27	0.32
Lead	-	ND	ND
Arsenic	-	ND	ND
Dichloromethane	-	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	319.0	8.6	310.4	0.0
Dichloromethane (methylene chloride)	18.8	16.0	0.0	2.8
Nickel compounds	20.9	0.0	1.9	0.0
Silver and silver water-soluble compounds	4.1	0.0	0.0	0.5

Unit: ton per year *1 Total including air, water, and soil emissions.

TDK-MCC Corp.

Location	151 Maeda, Hirasawa, Nikaho-machi, Yuri-gun, Akita Prefecture
Production	Multilayer chip devices
Land	61,000 square meters
Premises	33,000 square meters
Completion	June 1971
Number of employees	750

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers *4 (8 units)	Kerosene	Sulfur oxides	0.856	0.006
		Nitrogen oxides	180	78
		Soot and dust	0.3	0.01

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosene boilers are subject to prefectural regulations.

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	6.7	6.5–7.1 *1
BOD	-	30	59
SS	-	22	69
n-Hexane (Mineral oil)	-	ND	1
Copper	-	0.02	0.03
Soluble iron	-	0.3	0.43
Soluble manganese	-	0.06	0.1
Total chromium	-	ND	ND
Number of coliform organisms	-	43	170
Lead	-	ND	0.02
Hexavalent chromium	-	ND	ND
1.1.1 Trichloroethane	-	ND	ND
Trichloroethylene	-	ND	ND
Tetrachloroethylene	-	ND	ND
Dichloromethane	-	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	414.7	323.1	91.6	0.0
Barium and barium water-soluble compounds	94.4	0.0	29.9	0.0
Dichloromethane (methylene chloride)	558.5	383.1	175.4	0.0
Nickel compounds	110.8	0.0	17.2	0.0
Lead and lead compounds	25.4	0.0	13.1	0.0
Xylene	29.1	22.4	6.7	0.0
Cobalt and cobalt compounds	1.2	0.0	0.4	0.0
Silver and silver water-soluble compounds	1.7	0.0	0.3	0.0
Chromium and trivalent chromium compounds	1.7	0.0	0.6	0.0
Vanadium pentoxide	1.8	0.0	0.6	0.0
Ethylene glycol	13.3	9.1	4.2	0.0
Hydrazine	1.0	0.0	1.0	0.0
Di-n-butyl phthalate	5.9	4.0	1.9	0.0
n-butyl=benzyl	39.3	26.8	12.5	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Iwaki Kogyo Corp.

Location	16-2 Tamachi, Kameda-machi, Kameda, Iwaki-machi, Yuri-gun, Akita Prefecture
Production	NEO magnets, chip capacitors
Land	9,000 square meters
Premises	4,000 square meters
Completion	July 1972
Number of employees	90

Atmosphere (No facility subject to legal controls.)

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.3	6.7–7.9 *1
BOD	30	9.3	15
SS	70	8	8
Copper	1	0.06	0.1
Zinc	5	ND	0.03
Soluble iron	10	ND	0.4
Total chromium	2	ND	ND
Fluorine	15	3.4	7.6
Total nitrogen	-	290	390
Total phosphorus	-	0.52	1.6
Cyanogen	0.1	ND	ND
Lead	0.1	ND	ND
Hexavalent chromium	0.2	ND	ND

Unit: pH, nothing; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Nickel compounds	44.0	0.2	7.0	0.0
Copper water-soluble salt apart from complex salt	1.3	0.0	1.3	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Kisakata TDK Corp.

Location	100 Budojima, Kisakata-machi, Yuri-gun, Akita Prefecture
Production	High-voltage capacitors, ring varistor
Land	37,000 square meters
Premises	10,000 square meters
Completion	September 1972
Number of employees	290

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers *4 (2 units)	Kerosene	Sulfur oxides	0.961	ND
		Nitrogen oxides	180	77
		Soot and dust	0.3	0.01

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosene boilers are subject to prefectural regulations.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.4	6.8–7.9 *1
BOD	30	ND	ND
SS	70	1	8
n-Hexane (Mineral oil)	5	ND	1
Copper	1	0.01	0.02
Number of coliform organisms	3000	92	220
Lead	0.1	ND	ND
Dichloromethane	0.2	0.015	0.02

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	8.2	2.1	6.1	0.0
Dichloromethane (methylene chloride)	7.2	5.8	1.0	0.4
Lead and lead compounds	3.6	0.0	0.1	0.0
Silver and silver water-soluble compounds	2.1	0.0	0.0	0.2
Diglycidyleter of BPA	40.1	0.0	1.0	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Fuji Kogyosho Corp.

Location	167 Denkakumori, Hirasawa, Nikaho-machi, Yuri-gun, Akita Prefecture
Production	Line filters, SF coils, TF coils
Land	3,000 square meters
Premises	1,000 square meters
Completion	November 1972
Number of employees	70

Atmosphere (No facility subject to legal controls.)

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	7.3	6.8–7.9 *1
BOD	-	19	54
SS	-	33	230
Lead	0.1	ND	ND

Unit: pH, nothing; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	12.0	11.9	0.1	0.0
Xylene	4.5	4.5	0.0	0.0
Diglycidyleter of BPA	6.1	0.0	5.5	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Konoura TDK Corp.

Location	130 Juninomae, Konoura, Konoura-machi, Yuri-gun, Akita Prefecture
Production	High-frequency coils, high-frequency superposition module
Land	25,000 square meters
Premises	7,000 square meters
Completion	December 1974
Number of employees	560

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers *4 (4 units)	Kerosene	Sulfur oxides	0.912	ND
		Nitrogen oxides	180	80
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Kerosene boilers are subject to prefectural regulations.

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	6.9	6.8–6.9 *1
BOD	-	3.9	5.2
SS	-	4	4
Copper	-	0.01	0.02
Zinc	-	0.11	0.11
Number of coliform organisms	-	15	30
Cadmium	-	ND	ND
Cyanogen	-	ND	ND
Lead	-	ND	ND
Arsenic	-	ND	ND
Total mercury	-	ND	ND
Dichloromethane	-	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	1.7	1.7	0.0	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Yuzawa TDK Corp.

Location	8-7 Kitsunezaki, Iwasaki, Yuzawa City, Akita Prefecture
Production	EMI compressors, EMI suppressor arrays, EMI filters, common-mode choke coils
Land	21,000 square meters
Premises	5,000 square meters
Completion	February 1985
Number of employees	290

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (2 units)	Grade-A heavy oil	Sulfur oxides	2	0.02
		Nitrogen oxides	230	47
		Soot and dust	0.2	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.0	7.0–7.0 *1
BOD	30	8.1	8.1
SS	70	8	8
n-Hexane (Mineral oil)	5	ND	ND
Copper	1	0.06	0.06
Zinc	5	0.13	0.13
Soluble iron	10	0.09	0.09
Soluble manganese	10	ND	ND
Number of coliform organisms	3000	120	120
Lead	0.1	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	6.1	6.1	0.0	0.0
Dichloromethane (methylene chloride)	10.0	7.7	0.0	2.3
Nickel compounds	5.0	0.0	1.7	1.0
Xylene	6.0	6.0	0.0	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

TDK Akita Components Corp., Honjo City

Location	16-57 Yamanokami, Ishiwaki, Honjo City, Akita Prefecture
Production	DC/DC converters, NTC thermistors
Land	47,000 square meters
Premises	7,000 square meters
Completion	July 1973
Number of employees	450

Atmosphere (No facility subject to legal controls.)

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result (Honjo 1st Plant)		Actual result (Honjo 2nd Plant)	
		Average	Maximum	Average	Maximum
pH	-	6.8	6.6–7.0 *1	7.5	7.2–7.7 *1
BOD	-	5.7	6.4	14	19
SS	-	3	3	18	29
n-Hexane (Mineral oil)	-	1	2	ND	1
Phenol	-	ND	ND	ND	ND
Copper	-	ND	ND	ND	ND
Zinc	-	0.02	0.02	0.1	0.1
Soluble iron	-	0.07	0.07	0.07	0.07
Soluble manganese	-	0.03	0.03	0.51	0.51
Number of coliform organisms	-	145	260	110	220
Lead	-	ND	ND	ND	ND
1.1.1.Torichloroethane	-	ND	ND	ND	ND
Trichloroethylane	-	ND	ND	ND	ND
Tetrachloroethylene	-	ND	ND	ND	ND
Dichloromethane	-	ND	ND	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	1.4	0.4	1.0	0.0
Dichloromethane (methylene chloride)	4.1	0.6	2.3	1.1
Lead and lead compounds	2.0	0.0	0.1	0.9
Diglycidyleter of BPA	4.9	0.0	0.2	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

TDK Akita Components Corp., Yashima Plant

Location	175 Okawara, Motomachi, Yashima-machi, Yuri-gun, Akita Prefecture
Production	EMC products, SA sensor products
Land	15,000 square meters
Premises	7,000 square meters
Completion	June 1973
Number of employees	360

Atmosphere (No facility subject to legal controls.)

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	6.9	6.9–6.9 *1
BOD	-	3.4	3.9
SS	-	3	4
n-Hexane (Mineral oil)	-	ND	ND
Copper	-	ND	0.06
Zinc	-	0.05	0.26
Soluble iron	-	0.45	0.78
Soluble manganese	-	0.07	0.21
Number of coliform organisms	-	ND	ND
Lead	-	ND	ND
Dichloromethane	-	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	2.0	1.1	0.9	0.0
Dichloromethane (methylene chloride)	24.6	20.3	0.0	4.4
Lead and lead compounds	1.7	0.0	0.0	0.2
Diglycidyleter of BPA	2.5	0.0	0.1	0.0
Di-aminoethanol	2.9	0.0	2.9	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Yuza TDK Corp.

Location	18-1 Maeda, Oaza Yuza-machi, Yuza-machi, Akumi-gun, Yamagata Prefecture
Production	SAW filters, optical isolators,ceramic resonators
Land	22,000 square meters
Premises	8,000 square meters
Completion	February 1968
Number of employees	250

Atmosphere (Air Pollution Control Law)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (2 units)	Kerosene	Sulfur oxides	0.483	ND
		Nitrogen oxides	180	54
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.1	6.9–7.3 *1
BOD	160(120)	7.1	10
SS	200(150)	20	26
n-Hexane (Mineral oil)	5	ND	ND
Copper	3	ND	ND
Soluble iron	10	0.17	0.27
Soluble manganese	10	ND	0.1
Fluorine	15	ND	ND
Number of coliform organisms	3000	ND	ND
Lead	0.1	ND	ND
Trichloroethylene	0.3	ND	ND
Tetrachloroethylene	0.1	ND	ND
Dichloromethane	0.2	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	2.0	1.6	0.3	0.0
Dichloromethane (methylene chloride)	50.6	32.1	0.0	18.5
Xylene	1.1	1.1	0.0	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Tsuruoka TDK Corp.

Location	97 Aburada, Oaza Yamada, Tsuruoka City, Yamagata Prefecture
Production	NL coils, SWRG power supply
Land	49,000 square meters
Premises	21,000 square meters
Completion	September 1968
Number of employees	590

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (2 units)	Kerosene	Sulfur oxides	1.12	ND
		Nitrogen oxides	180	69
		Soot and dust	0.3	ND
Cool and hot-water generators (2 units)	Kerosene	Sulfur oxides	1.45	ND
		Nitrogen oxides	260	64
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result (first drainage)*2		Actual result (second drainage)*2		Actual result (third drainage)*3	
		Average	Maximum	Average	Maximum	Average	Maximum
pH	-	7.5	7.4–7.6 *1	7.1	7.0–7.4 *1	7.5	7.4–7.6 *1
BOD	-	16.9	42.6	2.1	8	15	22.5
COD	-	21.6	33.4	8.8	10.5	10.3	11.5
SS	-	6.4	18	9.3	23	9.4	17
n-Hexane (Mineral oil)	-	1.4	3	0.6	1.9	ND	0.5
n-Hexane (Vegetable oil)	-	ND	ND	1.2	2.3	ND	ND
Phenol	-	ND	ND	ND	ND	ND	ND
Copper	-	0.01	0.01	0.03	0.03	ND	ND
Zinc	-	0.04	0.04	0.35	0.35	0.08	0.08
Soluble iron	-	0.34	0.34	0.05	0.05	0.06	0.06
Soluble manganese	-	0.01	0.01	0.01	0.01	0.48	0.48
Total chromium	-	ND	ND	ND	ND	ND	ND
Fluorine	-	ND	ND	ND	ND	0.1	0.1
Number of coliform organisms	-	ND	ND	ND	ND	12	36
Cadmium	-	ND	ND	ND	ND	ND	ND
Cyanogen	-	ND	ND	ND	ND	ND	ND
Lead	-	ND	ND	0.04	0.08	ND	ND
Hexavalent chromium	-	ND	ND	ND	ND	ND	ND
Arsenic	-	ND	ND	ND	ND	ND	ND
Total mercury	-	ND	ND	ND	ND	ND	ND
1.1.1.Trichloro ethylene	-	ND	ND	ND	ND	ND	ND
Dichloromethane	-	0.042	0.092	0.006	0.007	0.006	0.012

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values
*2: Used by September 2000 *3: Used from October 2000

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Dichloromethane (methylene chloride)	94.3	64.6	29.7	0.0
Lead and lead compounds	8.2	0.0	1.2	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Sakata TDK Corp.

Location	99-19 Meiji, Oaza Miyaumi, Sakata City, Yamagata Prefecture
Production	EMC, coils, transformers
Land	17,000 square meters
Premises	7,000 square meters
Completion	September 1981
Number of employees	240

Atmosphere (Air Pollution Control Law, prefectural regulations)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boiler (1 unit)	Kerosene	Sulfur oxides	0.43	0.005
		Nitrogen oxides	180	69
		Soot and dust	0.3	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	7.0	6.8–7.2 *1
BOD	-	13.1	19.4
SS	-	5.9	11
n-Hexane (Mineral oil)	-	1.1	1.4
Copper	-	ND	ND
Zinc	-	0.08	0.1
Soluble iron	-	0.41	0.66
Soluble manganese	-	0.09	0.1
Number of coliform organisms	-	360	480
Lead	-	ND	ND
Total mercury	-	ND	ND
Dichloromethane	-	ND	ND

Unit: pH, nothing; number of coliform organism, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	9.1	8.6	0.5	0.0
Dichloromethane (methylene chloride)	10.3	5.3	0.0	5.0
Lead and lead compounds	2.5	0.0	0.0	1.8
Xylene	4.7	4.6	0.1	0.0
Diglycidyleter of BPA	5.6	0.0	5.5	0.0

Unit: ton per year *1 Total including air, water, and soil emissions.

TDK Micro Device Corp.

Location	644-55 Hitana, Nakago-cho, Kitaibaraki City, Ibaraki Prefecture
Production	SAW filters, OELD
Land	108,000 square meters
Premises	10,000 square meters
Completion	January 1993
Number of employees	70

Atmosphere (Air Pollution Control Law, Pollution Control Agreement)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (4 units)	Kerosene	Sulfur oxides	5.34	ND
		Nitrogen oxides	180	81
		Soot and dust	0.3	0.003
Cool and hot-water generator (1 unit)	Kerosene	Sulfur oxides	5.65	ND
		Nitrogen oxides	180	57
		Soot and dust	0.3	0.003

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Water Pollution Control Law, Pollution Control Agreement)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.3	6.8–8.2 *1
BOD	25(20)	3.5	8.6
COD	25(20)	3.8	5.5
SS	40(30)	ND	7
n-Hexane (Mineral oil)	5	ND	ND
n-Hexane (Vegetable oil)	10	ND	ND
Copper	3	ND	0.2
Zinc	5	ND	0.5
Soluble iron	10	ND	0.2
Soluble manganese	10	ND	ND
Fluorine	8	ND	ND
Number of coliform organisms	3000	8	49
Lead	0.1	ND	ND

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	18.5	2.1	16.4	0.0
Nickel compounds	1.4	0.0	0.3	0.0
Silver and silver water-soluble compounds	4.3	0.0	0.0	2.8

Unit: ton per year *1 Total including air, water, and soil emissions.

Toso TDK Corp.

Location	10 Midoridaira, Yokaichiba City, Chiba Prefecture
Production	Dielectric filters, isolators, metal magnets
Land	16,000 square meters
Premises	5,000 square meters
Completion	April 1985
Number of employees	130

Atmosphere (No facility subject to legal controls.)

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result (Filter waste water treatment system)		Actual result (NEO waste water treatment system)	
		Average	Maximum	Average	Maximum
pH	-	7.5	7.3–7.7 *1	7.0	6.5–7.5 *1
BOD	-	24	25	24.1	45.4
COD	-	8	8.4	28.7	51.3
SS	-	9	9	12	25
n-Hexane (Mineral oil)	-	6	7.6	2.1	3.5
n-Hexane (Vegetable oil)	-	-	-	ND	ND
Soluble iron	-	-	-	9.2	9.2
Dichloromethane	-	0.08	0.11	0.02	0.04

Unit: pH, nothing; thers, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Barium and barium water-soluble compounds	14.2	0.0	0.4	0.0
Dichloromethane (methylene chloride)	2.0	1.7	0.3	0.0
Cobalt and cobalt compounds	3.0	0.0	0.0	0.5
Boron and boron compounds	6.2	0.0	0.0	1.0

Unit: ton per year *1 Total including air, water, and soil emissions.

Kofu TDK Corp.

Location	1955-1 Tokoji-cho, Kofu City, Yamanashi Prefecture
Production	Magnetic heads
Land	12,000 square meters
Premises	5,000 square meters
Completion	April 1962
Number of employees	130

Atmosphere (No facility subject to legal controls.)

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	6.7	6.5–7.0 *1
BOD	-	12.2	27
COD	-	13	22
SS	-	12	19
Number of coliform organisms	-	280	440
Lead	-	ND	ND
1.1.1.Torichloroethane	-	ND	ND
Trichloroethylane	-	ND	ND
Tetrachloroethylene	-	ND	ND

Unit: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law (No facility subject to legal controls.)

Media Technology Corp.

Location	801 Nakadate, Tamaho-cho, Nakakoma-gun, Yamanashi Prefecture
Production	Video tapes for private use, tapes for data back-ups and broadcasting services
Land	29,000 square meters
Premises	11,000 square meters
Completion	October 1991
Number of employees	220

Atmosphere (Air Pollution Control Law)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (3 units)	Grade-A heavy oil	Sulfur oxides	2.08	0.11
		Nitrogen oxides	180	120
		Soot and dust	0.15	ND

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	6.9	5.6–8.0 *1
BOD	-	292	520.5
COD	-	189.5	335
SS	-	9.5	22.7
n-Hexane (Mineral oil)	-	2.1	4.6
Lodine consumption	-	21.7	52.7

Unit: pH, nothing; thers, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Ohemical Oxygen demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine
*1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Toluene	320.8	38.5	4.2	278.1
Cobalt and cobalt compounds	46.7	0.0	0.6	0.5

Unit: ton per year *1 Total including air, water, and soil emissions.

Iida TDK Corp.

Location	7659 Myo, Matsuo, Iida City, Nagano Prefecture
Production	ELF coils, NL wire-wound chip inductors
Land	19,000 square meters
Premises	7,000 square meters
Completion	December 1966
Number of employees	200

Atmosphere (Air Pollution Control Law)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (2 units)	Grade-A heavy oil	Sulfur oxides	0.8	0.01
		Nitrogen oxides	180	72
		Soot and dust	0.3	0.0092

*1: Units: Sulfur oxides, Nm^3/h; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality (Not subject to legal controls but governed by voluntary standards.)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	-	8.6	8.6–8.6 *1
BOD	-	310	310
SS	-	99	99
n-Hexane (Mineral oil)	-	ND	ND
n-Hexane (Vegetable oil)	-	13	13
Lead	-	0.005	0.005
Dichloromethane	-	0.016	0.016

Unit: pH, nothing; thers, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law

Chemical substance	Volume used	Emission *1	Volume removed as waste	Recycled
Dichloromethane (methylene chloride)	47.2	36.5	0.0	10.7
Lead and Lead compounds	9.5	0.0	6.5	3.1

Unit: ton per year *1 Total including air, water, and soil emissions.

TDK Service Corporation Akita Sales Office

Location	29 Sakanoshita, Hirasawa, Nikaho-machi, Yuri-gun, Akita Prefecture
Operation	Insurance and retail business
Land	2,000 square meters
Premises	1,000 square meters
Completion	1982
Number of employees	160

Atmosphere (No facility subject to legal controls.)

Water quality (Water Pollution Control Law, prefectural regulations)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.4	7.1–7.7 *1
BOD	60	20	60
SS	60	ND	ND
n-Hexane (Mineral oil)	5	ND	ND
Phenol	5	ND	ND
Copper	1	0.05	0.1
Zinc	5	0.07	0.27
Soluble iron	10	0.2	0.28
Soluble manganese	10	0.4	1.1
Fluorine	15	ND	0.2
Cadmium	0.1	ND	0.005
Lead	0.1	ND	0.01

Unit: pH, nothing; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected Fluorine *1: Minimum and maximum pH values

Substances covered by the PRTR Law (No facility subject to legal controls.)

Korea TDK Co., Ltd.

Location	670, Kasan-dong, Gumchon-ku, Seoul, Republic of Korea
Production	Ferrite cores, chip capacitors
Land	16,000 square meters
Premises	21,000 square meters
Completion	May 1973
Number of employees	530

Atmosphere (Air Environment Protection Law)

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Incinerator (1 unit)	Waste	Sulfur oxides	300	24.32
		Nitrogen oxides	200	64.43
		Soot and dust	100	51.6
		Carbon monoxide	600	33.02
		Smoke and soot	2	0
		Hydrogen chloride	50	0.91

*1: Units: Sulfur oxides, nitrogen oxides, carbon monoxide, and hydrogen chloride, ppm; Soot and dust, g/Nm3, smoke and soot: degree

Water quality (Water Environment Protection Law)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.8–8.6	7.5	6.6–8.3 *1
COD	130	3.45	4.2
SS	120	12.6	18
n-Hexane	5	1.22	1.6
Anionic surfactant	5	0.053	0.08

Unit: pH, nothing; others, mg per liter pH: hydrogen ion exponent COD: Chemical Oxygen Demand SS: Suspended Solids in water
*1: Minimum and maximum pH values

TDK Dalian Corporation

Location	No. 68 West Huaihe Road, Dalian Economic & Technical Development Zone, Liaoning, People's Republic of China
Production	Ferrite cores, coils, filters, deflection coils for color TVs, isolators
Land	137,000 square meters
Premises	41,000 square meters
Completion	April, 1993
Number of employees	1,290

Atmosphere (No facility subject to legal controls.)

Water quality (Standard of Sewage Treatment Plant)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6.0–9.0	7.5	6.8–8.3 *1
n-Hexane (vegetable oil)	100	7.3	13.7
Petroleum	20	3.1	13.7
Phosphorus	15	3.8	7.4

Unit: pH, nothing; others, mg per liter pH: hydrogen ion exponent COD: Chemical Oxygen Demand SS: Suspended Solids in water *1: Minimum and maximum pH values

TDK Taiwan Corporation Yangmei Plant

Location	159 Section 1, Chung Shan North Road, Tatung Li, Yangmei, Taoyuan, Taiwan
Production	Ferrite cores, switching power supplies, magnetic heads, metal magnets, coils, transformers, ceramic capacitors
Land	70,000 square meters
Premises	51,000 square meters
Completion	August 1968
Number of employees	1,860

Atmosphere (No facility subject to legal controls.)

Water quality (Sewage Disposal Standard)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6.0–9.0	7.5	7.5–7.5 *1
BOD	30	24	24
COD	100	57	57
SS	30	24	24
Soluble iron	10	0.57	0.57
Soluble manganese	10	0.84	0.84
Number of coliform organisms	2000	18	18

Units: pH, nothing; number of coliform organisms, counts per cc; others, mg per liter
pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand SS: Suspended Solids in water
*1: Minimum and maximum pH values

SAE Magnetics (Hong Kong) Ltd.

Location	SAE Tower, 38-42 Kwai Fung Crescent, Kwai Chung, New Territories, Hong Kong
Production	Various types of heads
Land	69,000 square meters
Premises	14,000 square meters
Completion	October 1980
Number of employees	7,200

Atmosphere (Air Pollution Control Law)

Facility	Fuel	Substances emitted *1		Regulatory level *2	Actual result *3
Boiler (1 unit)	Light oil	Sulfur oxides	(g/Nm^3)	0.7	0.225
			(kg/h)	1.33	0.48
		Nitrogen oxides	(g/Nm^3)	0.42	0.067
			(kg/h)	0.4	0.14
		Soot and dust	(g/Nm^3)	0.15	0.1385
			(kg/h)	1.82	0.29
		Smoke and soot	(degree)	1	1

Water quality (Water Pollution Control Law)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6.0–9.0	7.3	6.8–7.3 *1
BOD	30	12	12.81
COD	100	52.4	56.02
SS	70	50.5	61
Oil	10	0.345	0.403

Units: pH, nothing; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand SS: Suspended Solids in water *1: Minimum and maximum pH values

TDK (Thailand) Co., Ltd. Rojana Plant

Location	Rojina Industrial Park 1/62 Moo 5. Rojana Road, Tambol Kanham, Amphur Uthai, Ayutthaya, 13210, Thailand
Production	Audio tapes, metal magnets, chip capacitors
Land	104,000 square meters
Premises	14,000 square meters
Completion	November 1991
Number of employees	910

Atmosphere (No facility subject to legal controls.)

Water quality (Acceptance criterion for public effluent treatment facility)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6–9	6.9	6.9–7.0 *1
BOD	1000	16.8	29
COD	1250	103.9	160
DS	3000	660.2	739.67
SS	200	39.8	50.33
Sulfide	1	1.8	4.3 *2
Cyanide	0.2	ND	ND
Formaldehyde	1	0.02	0.03
Phenol, cresol	1	ND	ND
Fluoride	5	ND	ND
Free cholorine	1	ND	ND
Free ammonia	50	20.4	23.8
Ammonia	50	23.5	29.91
Oil, fat	5	0.1	0.1
Detergent	100	3.6	6.11
Zinc	5	ND	ND
Chromium	0.5	0.005	0.007
Arsenic	0.25	ND	ND
Copper	2	ND	ND
Mercury	0.005	0.002	0.003
Cadmium	0.03	0.009	0.01
Barium	1	ND	ND
Selenium	0.02	ND	ND
Lead	0.2	0.04	0.042
Nickel	0.2	0.007	0.0098
Manganese	5	ND	ND
Silver	1	ND	ND
Stannum	1	0.008	0.009
Aluminum	5	0.04	0.04
Total nitrogen	100	5.3	5.6

Units: pH, nothing; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand DS: Dissolved Solids SS: Suspended Solids in water ND means below the volume that can be detected.
*1: Minimum and maximum pH values
*2: After cleaning gutter up, the status of emissions has improved.

TDK (Thailand) Co., Ltd. Wangnoi Plant

Location	149 Moo 5, Phaholyothin Road, Tambol lamsai, Amphur Uthai, Ayutthaya, 13170, Thailand
Production	VCM
Land	12,000 square meters
Premises	10,000 square meters
Completion	December 1998
Number of employees	210

Atmosphere (No facility subject to legal controls.)

Water quality (Industrial Bureau aviso)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.5–9.0	8.4	8.2–8.7 *1
BOD	20	9.67	16
COD	120	24.67	42
TDS	3000	212	358.17
SS	50	15.67	28.33
Oil, fat	5	ND	ND
Cadmium	0.03	0.0033	0.0039
Lead	0.2	0.035	0.046
Nickel	10	0.0292	0.0419
Copper	2	0.0173	0.0438
Zinc	5	0.0188	0.0409
Selenium	0.02	ND	ND
Sulfide	1	0.52	0.68
Formaldehyde	1	0.08	0.11

Units: pH, nothing; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand TDS: Total Dissolved Solids SS: Suspended Solids in water ND means below the volume that can be detected. *1: Minimum and maximum pH values

TDK Philippines Corporation

Location	119 East Science Avenue Special Export Processing Zone Laguna Technopark, Binan, Laguna, Philippines
Production	Magnetic heads
Land	84,000 square meters
Premises	34,000 square meters
Completion	December 1997
Number of employees	3,500

Atmosphere (No facility subject to legal controls.)

Water quality (Philippine Environmental Code)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6.5–9.0	7.3	6.8–7.8 *1
BOD	50	19	33
COD	100	53	97
Solid	70	28	48

Units: pH, nothing; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand ND means below the volume that can be detected. *1: Minimum and maximum pH values

TDK Softec (M) Sdn. Bhd.

Location	Lot 35, Sector B, HICOM Industrial Area, Section 26, 40000Shah Alam, Selangor Darul Ehsan, Malaysia
Production	Ferrite cores
Land	30,000 square meters
Premises	9,000 square meters
Completion	July 1989
Number of employees	300

Atmosphere (No facility subject to legal controls.)

Water quality (No measurement)

TDK Components U.S.A., Inc.

Location	1 TDK Boulevard, Highway 74 South, Peachtree City, GA 30269-2047 U.S.A.
Production	Chip capacitors
Land	61,000 square meters
Premises	6,000 square meters
Completion	July 1986
Number of employees	340

Atmosphere (No facility subject to legal controls.)

Water quality

Category	Regulatory level	Actual result	
		Average	Maximum
pH	5.0–11.0	7.1	6.3–8.6 *1
BOD	900	35.8	119
COD	1500	89.9	164
Total nitrogen	60	0.597	0.95
Total cadmium	0.037	ND	ND
Total chromium	1.71	0.01	0.01
Copper	0.235	0.02	0.02
Total cyanides	0.082	0.01	0.01
Lead	0.111	0.05	0.05
Nickel	0.909	0.148	0.36
Silver	0.241	0.017	0.07
Zinc	0.186	0.029	0.14
TTO	2.13	0.076	0.087
TSS	900	11.7	21.4

Units: pH, nothing; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand TTO: Total Toxic Organics TSS: Total Suspended Solids in water ND means below the volume that can be detected. *1: Minimum and maximum pH values

Discom, Inc.

Location	334 Littleton Road, Westford, MA 01886 U.S.A.
Production	Ferrite chips, EMI
Land	18,000 square meters
Premises	3,000 square meters
Completion	August 1988
Number of employees	20

Atmosphere (No facility subject to legal controls.)

Water quality (No measurement)

TDK Ferrites Corporation

Location	5900 North Harrison Street, Shawnee, OK 74804 U.S.A.
Production	Ferrites magnets, ferrites cores
Land	325,000 square meters
Premises	28,000 sqaure meters
Completion	May 1987
Number of employees	510

Atmosphere

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Dryer loasts (2 units)	Natural gas	Sulfur oxides	0	0
		Nitrogen oxides	1.951	1.417
		Soot and dust	18.634	1.719
		Carbon monoxide	0.489	0.284
Calcination furnaces (3 units)	Natural gas	Sulfur oxides	0	0
		Nitrogen oxides	2.492	1.32
		Soot and dust	0	0
		Carbon monoxide	1.119	0.2
Rotary-kiln scrubber (1 unit)	Natural gas	Sulfur oxides	0	0
		Nitrogen oxides	0	0
		Soot and dust	1.434	0.914
		Carbon monoxide	0	0
Incinerators (12 units)	Natural gas	Sulfur oxides	0	0
		Nitrogen oxides	25.414	8.359
		Soot and dust	29.826	11.638
		Carbon monoxide	5.713	1.527
Calcination furnaces (4 units)	Natural gas	Sulfur oxides	0	0
		Nitrogen oxides	15.85	7.773
		Soot and dust	9.409	5.681
		Carbon monoxide	7.338	4.829
		Hydrogen choloride	3.872	1.555

*1: Units: tons per year *2: Total of all target facilities

Water quality

Category	Regulatory level	Actual result of waste channel 1		Actual result of waste channel 2	
		Average	Maximum	Average	Maximum
pH	5.0–12.5	7.9	7.3–8.8 *1	8.0	7.3–8.7 *1
Temperature	65	26.1	32.7	19.5	26.3
TSS	500	26	280	52	220
Iron	50	2	50	7	40
Chromium	0.467	0.012	0.063	0.006	0.03

Unit: pH, nothing; temperature, centigrade; others, mg per liter pH: hydrogen ion exponent TSS: Total Suspended Solid in water *1: Minimum and maximum pH values

TDK de Mexico S.A. de C.V.

Location	Calle Ohm #8450, Parque Ind. A.J. Bermudez Cd. Juarez, Chihuahua, Mexico
Production	Ferrite magnets, coils, transformers, filters
Land	1.6 square meters
Premises	4.2 square meters
Completion	January 1974
Number of employees	990

Atmosphere (No facility subject to legal controls.)

Water quality

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6.0–9.0	8.4	8.4–8.4 *1
Oil, fat	55	14.6	14.6
BOD	220	173	173
Total solids	2100	1089	1089
SS	180	70	70
Precipitate	1.5	1	1
Dissolution material	1500	1068	1068
Soap	30	14.5	14.5
Iron	1.5	0.57	0.57
Zinc	2	ND	ND
Aluminum	1.5	0.127	0.127
Copper	0.4	0.02	0.02
Chromium	0.5	0.03	0.03

Units: pH, nothing; temperature, centigrade; others, mg per liter pH: hydrogen ion exponent BOD: Biochemical Oxygen Demand SS: Suspended Solids in water
ND means below the volume that can be detected.
*1: Minimum and maximum pH values

TDK Manufacturing Deutschland GmbH

Location	Glan StraÉ¿e. 33,66887, Rammelsbach Germany
Production	Audio tapes, CD-R, EL coils
Land	87,000 square meters
Premises	15,000 square meters
Completion	December 1985
Number of employees	380

Atmosphere (No facility subject to legal controls.)

Water quality (No measurement)

TDK Recording Media Europe S.A.

Location	6Z.I. Bommelscheuer, P.O. BOX 120 L-4902 Bascharage, Grand Duchy of Luxembourg
Production	Audio tapes, Video tapes, CD-R, MD
Land	60,000 square meters
Premises	46,000 sqaure meters
Completion	August 1989
Number of employees	630

Atmosphere

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
EGI *4 (2 units)	Organic solvents	Sulfur oxides	500	0.1
		Nitrogen oxides	500	67.8
		Soot and dust	50	0.2
		Carbon monoxide	100	23
	Natural gas	Hydrocarbon remnant *5	20	6.5
		Inorganic chlorine compound	30	ND
		Inorganic fluoride compound	5	ND
EGI *4 (1 unit)	Tetrafluoro-propane gas	Sulfur oxides	35	ND
		Nitrogen oxides	200	123
		Soot and dust	5	8.2
		Carbon monoxide	100	ND
		Hydrocarbon remnant *5	20	ND
		Inorganic fluoride compound	2	0.36

*1: Units: Sulfur oxides, Nm3/hr; nitrogen oxides, ppm; soot and dust, g/Nm3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.
*4: Deodorization machine
*5: Figures are showen based on amount of carbon components.

Water quality (No measurement)

BT Magnet-Technologie GmbH

Location	ForellstraBe 100, 44629 Herne, Germany
Production	Ferrite magnets
Land	51,000 square meters
Premises	10,000 square meters
Completion	December 1990
Number of employees	520

Atmosphere (No facility subject to legal controls.)

Water quality (Acceptance criterion for public effluent treatment facility)

Category	Regulatory level	Actual result	
		Average	Maximum
pH	7.0–12.0	9.8	8.8–10.8 *1
COD	1000	351	351
LWKW	1	0.787	0.787

Units: pH, nothing; others, mg per liter pH: hydrogen ion exponent COD: Chemical Oxygen Demand LHKW: volatile halogerated hydrocarbons
*1: Minimum and maximum pH values

TDK Electronics Hungary

Location	Pusztaszantoi u. 10, Ipari Park, 26t51 Retsag, Magyarorszag Hungary
Production	Ferrite cores
Land	100,000 sqaure meters
Premises	14,000 sqaure meters
Completion	1997
Number of employees	900

Atmosphere

Facility	Fuel	Substances emitted *1	Regulatory level *2	Actual result *3
Boilers (5 units)	City gas	Nitrogen oxides	0.135	0.0838
		Carbon monoxide	4.5	0.0324

*1: Units: Sulfur oxides, Nm^3/hr; nitrogen oxides, ppm; soot and dust, g/Nm^3
*2: Regulatory level values are based on the most severe value in the target facility.
*3: Actual figures are the highest figure in the year for the target facilty.

Water quality

Category	Regulatory level	Actual result	
		Average	Maximum
pH	6.5–10.0	8.1	7.5–8.5 *1
COD	1000	138.7	270
Ammoniacal nitrogen	150	28.1	59
SS	-	667	750
Zinc	10	0.59	0.89
Silver	0.2	ND	ND
Cadmium	0.1	ND	ND
Chromium	1	ND	ND
Nickel	1	ND	ND
Lead	0.4	ND	ND
Copper	2	0.08	0.14
Iron	20	0.55	0.74
Organic solvent	50	3.8	5.2
Detergent	50	0.91	0.91

Units: pH, nothing; others, mg per liter pH: hydrogen ion exponent COD: Chemical Oxygen Demand SS: Suspended Solids in water ND means below the volume that can be detected. *1: Minimum and maximum pH values