The Ricoh Group is engaging not only in control and reduction of the amount of chemical substances used and discharged, but also in prevention and remediation of soil contamination.

Concept

The Ricoh Group categorizes and controls chemical substances that are regulated in various countries around the world according to whether they are to be prohibited, reduced, or controlled. As for chemical substances classified as those to be reduced, the Ricoh Group is engaged in reduction based on a concept of risk management. This is a method to reduce chemical substances whose environmental impact is serious. The environmental impact is determined by calculating the amount of chemical substances used/discharged and the environmental impact potential*. The Ricoh Group also endeavors to reduce the amount of chemicals used and emitted by setting goals to reduce dichloromethane and ozone-depleting substances. Additionally, the Group sets a standard to prevent environmental risk from occurring. Based on the standard, each business site thoroughly controls the amount of chemicals used, emitted, discharged, and disposed of in order to prevent percolation or outflow to the environment. The Group also conducts surveys on soil and underground water contamination based on the recorded use of chemical substances and restores plants where pollution occurs.

* The environmental impact potential is set by Ricoh, taking toxicity, carcinogenicity, and the possibility of ozone depletion into consideration.

<The Entire Ricoh Group>

Amount of Environmentally Sensitive Substances Used and Emitted in Fiscal 2004

❶ The Ricoh Group (production)

Units: tons

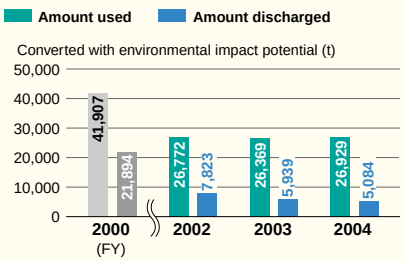
Substance	Environmental Impact Potential	Amount used[1]	Amount emitted[1]	Amount treated	Amount consumed	Amount emitted[2]	Amount transported	Amount disposed of	Amount recycled
Toluene	10	14,209	975	1,467.5	46.6	97.5	0.1	677.3	646.0
Dichloromethane	100	3,729	1,892	41.6	4.3	18.9	—	—	18.4
N, N-dimethylformamide	100	3,484	53	34.8	—	0.5	—	—	34.3
Nickel sulfate	100	234	0	5.7	3.3	—	—	—	2.3
Lead (Lead solder)	100	173	0	4.9	3.2	—	0.0	—	1.7
Xylene	10	78	67	7.9	0.1	6.7	—	0.0	1.1
Ethylene glycol	1	24	1	268.8	245.0	1.0	—	2.4	20.4
Zinc chloride	10	10	0	25.0	24.1	—	—	—	1.0
Antimony trioxide	100	8	0	1.4	1.3	—	0.0	—	—
Methyl methacrylate	1	7	0	7.3	—	0.1	—	5.0	2.2
Methacrylic acid	1	2	0	2.4	0.0	0.0	—	1.7	0.7
Thiourea	1	0	0	21.4	20.9	—	—	—	0.4
Poly(oxyethylene) alkyl ether	1	0	0	1.7	1.6	—	—	—	0.1

* Environmentally sensitive substances that are regulated by the Ricoh Group include all substances to which PRTR is applied. Substances listed are those treated in an amount of one ton or more annually. The amount of metal compounds is converted into metal.

1. The amount of the Ricoh Group's target substances for reduction used and discharged is calculated by using the following formula.
   Amount used = Σ {(amount – amount consumed) × environmental impact potential}
   Amount discharged = Σ {(amount emitted into air + amount discharged into public water supply + amount discharged into soil) × environmental impact potential}
2. Amount emitted = amounted emitted into air + amount discharged into public water supply + amount discharged into soil

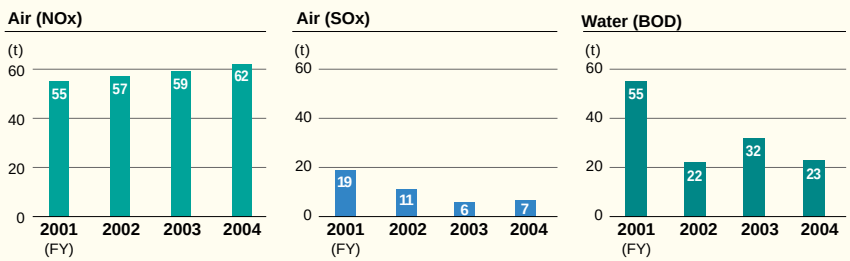
Changes in the Amount Used and Discharged of Ricoh Target Substances for Reduction

❷ The Ricoh Group (production)



Changes in the Amount of Nox, SOx and BOD

❸ The Ricoh Group (production)



* The Ricoh target substances for reduction are defined as the PRTR substances designated by four Electric/Electronic Industrial Associations in Japan between fiscal 1998 and fiscal 2000. Coverage of chemical substances by Ricoh may differ slightly from those provided by the PRTR Law.

Segment Environmental Accounting of Pollution Prevention Activities at Business Sites (The Entire Ricoh Group)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Costs	Items	Benefits	Items	Amount
Business area cost	Pollution prevention cost	¥397.7 million	Reduction in social cost	¥127.3 million	NOx SOx BOD PRTR substances (calculated with the conversion potential)	9.4 (t) –0.6 (t) 8.9 (t) 854.6 (t)
			Amount of risk avoidance effect (incidental effect)	¥5,936.0 million		

● Targets for Fiscal 2004

◎ Reduce environmentally sensitive substances (the Ricoh Group's target substances) to 8% of those used and 50% of those emitted (compared to fiscal 2000 figures).

◎ Completely eliminate the use of dichloromethane.

◎ Reduce emissions of ozone-depleting substances by 60% (compared to fiscal 2000 figures).

* Targets for Ricoh and the Ricoh Group's manufacturing subsidiaries in and outside Japan

● Review of Fiscal 2004

The amount of environmentally-sensitive substances used were reduced by 36% compared to the fiscal 2000 level but increased by approximately 560 tons[1] compared to that in the previous fiscal year. Emissions of these substances were reduced by 77% compared to the fiscal 2000 level and by about 860 tons[2] compared to that in the previous fiscal year (see graph ❷). Having completed the switch to an alternative solvent that we developed, we eliminated the use of dichloromethane in March 2005. The emissions of ozone-depleting substances were reduced by 88% compared to the fiscal 2000 level and by about 90 ODP-kg[3] compared to that in the previous fiscal year. Regarding the examination and purification of soil and underground water contamination, in addition to surveys and antipollution measures at production sites, we started research on non-production sites by collecting related information.

1. and 2. Both figures were converted with an environmental impact coefficient.
3. The figure was converted by ozone-depleting potential.

● Future Activities

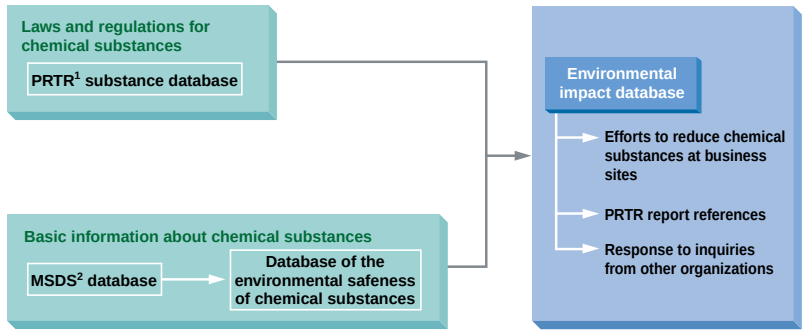
We will continue our efforts to reduce the use and emissions of chemical substances so that they are kept at current levels even though business operations will be significantly expanded in the Medium-term Management Plan for fiscal 2005 and thereafter. We completely eliminated the use of chlorine organic solvents at our production sites and plan to discontinue their use in the consignment production of photo conductors at plants other than Ricoh's. To deal with the issue of soil and underground water contamination, we will start a hearing and conduct surveys on non-production sites that have a high risk of contamination.

Chemical Substance Control Using IT System and Information Disclosure

<Ricoh Group (Global)>

The Ricoh Group established RECSIS to monitor data on chemical substances used, discharged, and disposed of at business sites. RECSIS is designed to promote reduction in the use of chemical substances, to prepare materials for PRTR reporting, and to speedily respond to inquiries from customers around the world, original equipment manufacturers, and citizens' groups.

Environmental and Chemical Safety Information System for Business Sites



1. Pollutant Release and Transfer Register
2. Material Safety Data Sheet

Discontinuing the Use of Chlorine Organic Solvents

<Ricoh Group (Global)>

The Ricoh Group endeavored to completely discontinue the use of chlorine organic solvents, which have considerable environmental impact. Dichloromethane, which is one such substance, was used to manufacture photoconductors for copiers already on the market. However, the Ricoh Group succeeded in developing an alternative solvent and improving production processes so that of the use of dichloromethane was completely discontinued by the end of fiscal 2004. This means that the Ricoh Group uses absolutely no chlorine organic solvents in any of its production processes.

Reduction in the Use and Emissions of Toluene

<Ricoh Numazu Plant, Fukui Plant (Japan)>

Toluene is the most used substance of all the chemicals that Ricoh uses in manufacturing products, but its environmental impact is considerable. Although toluene is used in producing supplies for copiers at Numazu Plant, the annual consumption of toluene was reduced by roughly 350 tons per year (converted) thanks to the development of a new production process.

At Fukui Plant, toluene is used in manufacturing thermal transfer ribbons, and the used toluene is recycled. The efficiency of this recycling process was improved, leading to a reduction of almost 520 tons per year (converted) of toluene.

Initiating the Examination and Purification of Soil and Underground Water at Non-Production Sites

<Ricoh Group (Global)>

Production sites are not the only ones faced with the risks of soil and underground water pollution. Even non-production sites are exposed to the same risks because there is the possibility that production was conducted there before we purchased them. In fiscal 2004, the Ricoh Group began examining soil and underground water at non-production sites, including sales companies, maintenance/service companies, and transportation/distribution companies, worldwide. Preliminary surveys were conducted to prepare a list of non-production sites that needed examination. The data that was collected to make this list is as follows: a listing of sites covered, business history from the start of operations to the present, production history (including the production of copiers and parts), and site history prior to the start of operations. Based on this data, pollution risks were classified into five levels. The Ricoh Group plans to sequentially examine the soil and underground water at sites with significant risks and survey the employees who work there. The company intends to complete its survey of all sites by fiscal 2007. For sites where pollution is detected, Ricoh will deal with the problem systematically.

Steps for Soil Examination at Non-Production Sites

- **Pollution is classified into five levels based on surveys and data (a listing of sites, types of operation, production history, and site history prior to the start of operations).**

A further examination is conducted, placing priority on sites that have a high level of pollution.

- **Surveys on the use of substances subject to examination, interviews, and field surveys are carried out.**

If substances that may contaminate soil were used

- **Gas and surface soil are examined, drilling surveys are conducted, and a monitoring well is set up.**

If pollution is detected

- **Improvements are made according to a schedule, and risk management is carried out.**

Examination and Purification of Soil and Underground water at Production Sites

<Ricoh Group (Global)>

Thinking it important to address the problems of soil and underground water pollution, the Ricoh Group started to examine and purify soil and underground water at its production sites in Japan in 1992. Subsequently, in 1999 a committee linking employees directly with the management teams of Ricoh and other Ricoh Group companies was established. In fiscal 2001, the Ricoh Group began examining and improving the soil and underground water at production sites outside Japan. Based on the history of their use of chlorine organic solvents and heavy metals, overseas production sites and R&D facilities that were possibly polluted were identified. An investigation into whether the soil and underground water at these sites were actually polluted was conducted. In locations where soil/underground water pollution was detected, we reported our findings to the relevant municipal government, submitted an improvement plan, and began purification activities. The table on the right page shows the results of an underground water examination conducted as of March 2005. At the production sites where pollution was detected, detailed examinations and purification activities are now being conducted. At all production sites surveyed, including those where pollution was detected, no harmful influence over the surrounding areas has been found. As for purification activities, polluted soil, water, and/or harmful gases are removed on a case-by-case basis. When conducting thorough examinations and purification activities, production sites examine and implement rational and economic measures in cooperation with companies specialized in relevant surveys and activities. The sites are sometimes visited by municipal governments and other companies wanting to study their antipollution measures. The Ricoh Group itself developed and effectively used antipollution devices such as pumping equipment for purification. As of the end of fiscal 2004, the Ricoh Group spent approximately ¥1,280 million on examinations and purification activities in Japan, and will spend approximately ¥1,090 million until the completion of its purification activities.

In December 2004, a trace of fluorine pollution was detected at Ricoh's borrowed premises (Atsugi, Kanagawa Prefecture). This was discovered when the soil was examined at the time the borrowed land was returned to the owner in accordance with the provision (revised in October 2004). Ricoh immediately set up an antipollution team consisting of Ricoh staff and experts to draw up a purification program. Ricoh reported this to the landowner as well as to the people and municipalities concerned and completed the purification of the premises by the end of March 2005.

Removing polluted soil (at Ricoh Ohmori Office)

Soil improvement work at borrowed premises

❶Survey Results of Underground Water Pollution and Purification Efforts at Ricoh Production Sites and the Ricoh Group's Manufacturing Subsidiaries in Japan (As of March 2005)

Business site	Pollutant (Japan's environmental standard)	Survey result	Measures in implementation	Measures implemented
Ricoh Hatano Plant	Chlorine organic solvents Heavy metals, etc.	Cleaning completed (fiscal 1993) No pollution	——	Soil was removed.
Ricoh Numazu Plant, North Plant	Chlorine organic solvents Heavy metals, etc.	Cleaning completed (fiscal 1999) No history of use	——	The neutralization of gas and purification of underground water were completed.
Ricoh Numazu Plant, South Plant	Chlorine organic solvents Heavy metals, etc.	Cleaning completed (fiscal 1999) No pollution	——	Soil was removed.
Ricoh Ohmori Office	Trichloroethylene (0.03mg/L) Cis 12 dichloroethylene (0.04mg/L) Tetrachloroethylene (0.01mg/L) Heavy metals, etc.	0.242mg/L 0.0793mg/L 0.0120mg/L No pollution	• Purification of underground water • Regular monitoring	Soil was removed. The neutralization of gas was completed.
Ricoh Optical Industries*	Trichloroethylene (0.03mg/L) Cis 12 dichloroethylene (0.04mg/L) Tetrachloroethylene (0.01mg/L) Lead (0.01mg/L) Arsenic (0.01mg/L)	1.16mg/L 0.407mg/L 0.206mg/L 0.048mg/L 0.015mg/L	• Purification of underground water • Regular monitoring	The heavy metals are possibly nature derived (approved by the municipality).
Hasama Ricoh	Chlorine organic solvents Heavy metals, etc.	Cleaning completed (fiscal 2000) No pollution	——	Soil was removed.
Tohoku Ricoh	Cis 12 dichloroethylene (0.04mg/L) Trichloroethylene (0.03mg/L) Arsenic (0.01mg/L)	0.032mg/L 0.005mg/L 0.032mg/L	• Purification of underground water • Regular monitoring	Soil was removed. The neutralization of gas was completed. The arsenic is possibly nature derived (approved by the municipality).
Ricoh Elemex, Okazaki Plant	Trichloroethylene (0.03mg/L) 11-dichloroethylene (0.02mg/L) Tetrachloroethylene (0.01mg/L) Hexavalent chromium (0.05mg/L) Cadmium (0.01mg/L) Lead (0.01mg/L)	6.8mg/L 0.41mg/L 0.019mg/L 2.9mg/L 0.18mg/L 0.014mg/L	• Containment and purification of underground water • Neutralization of gas, Purification of underground water • Regular monitoring	
Ricoh Elemex, Ena Plant	Trichloroethylene (0.03mg/L) Cis 12 dichloroethylene (0.04mg/L) Hexavalent chromium (0.05mg/L) Arsenic and its compounds (0.8mg/L)	5.4mg/L 3.6mg/L 0.36mg/L 2.6mg/L	• Containment and purification of underground water • Neutralization of gas, Purification of underground water • Regular monitoring	
Ricoh Keiki	11-dichloroethylene (0.02mg/L) Heavy metals, etc.	0.017mg/L No pollution	• Purification of underground water • Regular monitoring	Soil was removed.

• No pollution: No pollution was detected where pollutants were used.
• The areas surrounding all business sites, including the above-mentioned sites, are not affected by pollutants.
* At Ricoh Optical Industries, a new source of lead contamination was discovered in soil surveys conducted in April 2004, and purification efforts were started in August 2004.
* All information, including business sites with no history of pollution, is shown on the Web site (http:/www.ricoh.com/environment/data/survey.html).

❷Survey Results of Underground Water Pollution and Purification Efforts at the Ricoh Group's Manufacturing Subsidiaries Outside Japan (As of March 2005)

Business site	Pollutant	Survey result	Measures in implementation	Measures implemented
Ricoh Electronics Inc., Irvine Plant (U.S.A.)	Cis 12 dichloroethylene Trichloroethylene Tetrachloroethylene Selenium	0.29mg/L 0.27mg/L 18mg/L 0.053mg/L	• Purification of underground water • Regular monitoring	Soil was removed.
Ricoh Electronics Inc., Tustin Plant (U.S.A.)	Chlorine organic solvents Heavy metals, etc.	No pollution No pollution	——	
Ricoh Electronics Inc., Santa Ana Plant (U.S.A.)	Chlorine organic solvents Heavy metals, etc.	No history of use No history of use	——	History of pollution caused by leakage of oil (purified)
Ricoh Electronics Inc., Georgia Plant (U.S.A.)	Chlorine organic solvents Heavy metals, etc.	No history of use No history of use	——	
Ricoh Industrie France S.A.S. (France)	Tetrachloroethylene Heavy metals, etc.	0.042mg/L No history of use	• Purification of underground water • Regular monitoring	The neutralization of gas was completed.
Ricoh UK Products Ltd. (U.K.)	Chlorine organic solvents Heavy metals, etc.	No pollution No pollution	——	
Ricoh Wellingborough Products Ltd. (U.K.)	Chlorine organic solvents Heavy metals, etc.	No pollution No pollution	——	
Ricoh Asia Industry (Schenzhen) Ltd. (China)	Chlorine organic solvents Heavy metals, etc.	No history of use No history of use	——	
Shanghai Ricoh Facsimile Co., Ltd. (China)	Chlorine organic solvents Heavy metals, etc.	No history of use No history of use	——	

• No pollution: No pollution was detected where pollutants were used.
• The areas surrounding all business sites, including the above-mentioned sites, are not affected by pollutants.