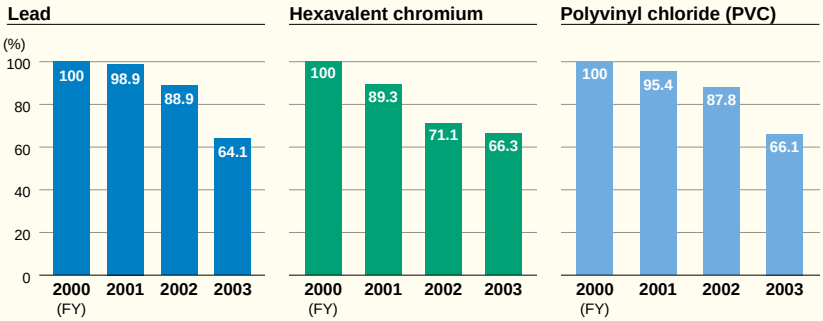
We are reducing the environmental impact that a product has during its lifecycle by reducing environmentally-sensitive substances contained in our products.

● Concept

Aiming to reduce the impact on the global environment and enhance end user comfort levels, the Ricoh Group is tackling important issues, specifically reduction of environmentally-sensitive substances contained in its products and reduction of noise, ozone, dust, and styrene emissions at the end-user stage. Environmentally-sensitive substances contained in products do not affect the environment when the products are in use, but they will affect the environment when the products come to the end of their lifecycle and are improperly disposed of. An eco-balance* assessment shows that reducing the use of these substances will ultimately lessen the environmental impact a product has during its lifecycle. It will also reduce recycling costs. Accordingly, the Ricoh Group has given top priorities to these challenges. * See page 29.

<Global>

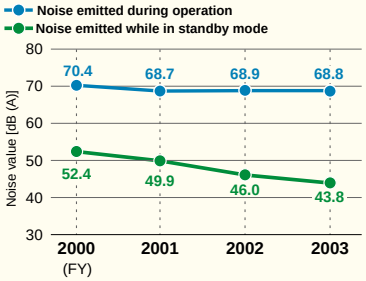
❶ Changes in the Amount of Chemical Substances Used in One Product (Compared with those in the figures for fiscal 2000)



(Calculation method to determine the amount of chemical substances used in one product)
Σ (Amount of chemical substance contained in one product × number of products sold)/Σ number of products sold (worldwide)

* Figures for the amount of chemical substances contained in each product are not the average for all models but the amount used in a representative model. Therefore the figures are being renewed along with the progress of research.

❷ Changes in the Level of Noise Emitted by Color Copiers



* Calculations are based on the weighted number of color copiers and color printers sold and converted into a capacity of a copier that produces 50 sheets per minute for all machines.

❸ Achievement of Standards for Environmentally-sensitive Chemical Substances

	Models That Achieved the Standards[1]	Ricoh Standards (mg/m³)	Blue Angel Mark Standard[2] (mg/m³)
Ozone	81/81	0.02	0.02
Dust	81/81	0.075	0.075
Styrene	81/81	0.07	0.07

1. Figures show the number of models that achieved the standards out of 81 models (copiers, facsimiles, and printers) marketed in fiscal 2003.
2. Figures show the standard values before the revision in January 2004.

● Targets for Fiscal 2004

◎ Completely eliminate the use of environmentally-sensitive substances (i,e., lead, hexavalent chromium, polyvinyl chloride, and cadmium) in products.

◎ Reduce noise levels by at least 2 dB (weighted average value for the number of units sold out of the number of units marketed in fiscal 2000).

◎ Observe Ricoh standards that cover environmentally-sensitive substances emitted by products, including styrene, ozone, and dust.

● Review of Fiscal 2003

Steady progress is being made in ensuring that our products contain absolutely none of the four environmentally-sensitive substances (lead, hexavalent chromium, polyvinyl chloride, cadmium) as a result of strengthening the management system for the 14 groups of substances prohibited by Ricoh* (see graph ❶). Noise levels while in standby mode have been reduced significantly, while noise levels during operation have been reduced slightly (see graph ❷). In the meantime, all our products put on the market during fiscal 2003 satisfy the standards for ozone, dust, and styrene emissions (see table ❸).

* See page 49.

● Future Activities

Efforts will be made globally to discontinue all use of the remaining four environmentally-sensitive substance groups out of the fourteen substance groups prohibited by Ricoh by supporting the establishment of chemical substance management systems at our suppliers and by joint development of alternatives under green partnerships. In addition, uses of another two substance groups, TBTO and TBT/TPT, will be prohibited by Ricoh in fiscal 2004 to strengthen its efforts. At the same time, efforts will be made to comply with Germany's Blue Angel Mark that was revised in January 2004.

Complete Elimination of Use of Environmentally-sensitive Chemical Substances

<Ricoh/Japan>

Ricoh set original standards for environmentally-sensitive substances that could be used in its products in 1993 as part of efforts to reduce these substances. In fiscal 2002, it set out a policy to completely eliminate use of the remaining four prohibited chemical substance groups out of the fourteen product groups prohibited by Ricoh, while organizing Total Elimination Working Group to stop all use. All the divisions engaged in production (the design, procurement, and manufacturing divisions) take part in the group. The group is engaged not only in research into chemical substances in products and judgments on the validity of the research results, but also in appointing key person in charge of total elimination of use of the substances for all parts, and establishing an environmental impact information database that will allow designers to check information on chemical substances contained in parts. Thus efforts are being made to build a seamless workflow and accelerated development for routine operations, aimed at eliminating all use of these chemicals.

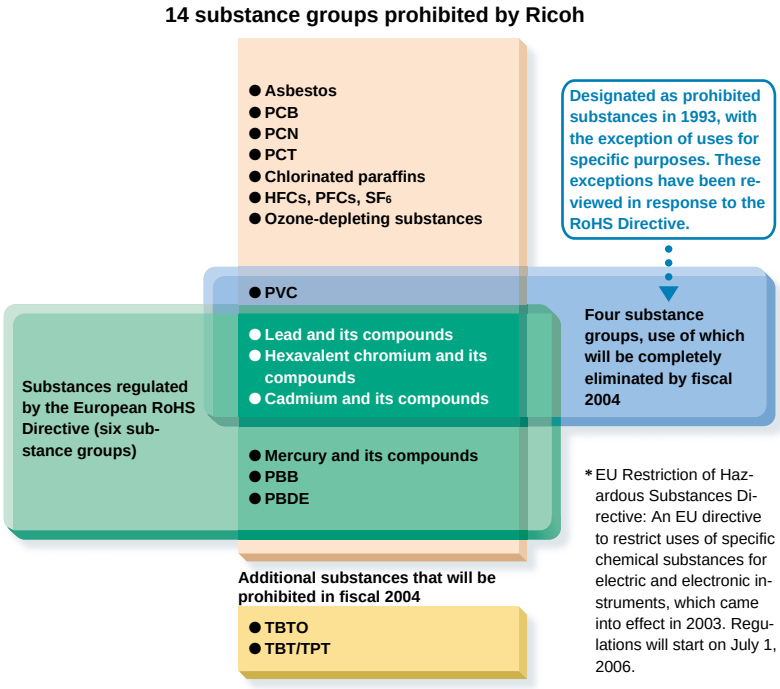
imagio Neo C385it (a color copier that can be used in a network has reduced levels of environmentally-sensitive chemical substances)

Reduction of environmentally-sensitive substances in imagio Neo C385it	
Lead-free soldering	GPN Rank* A
Use of PVC for wire coating	GPN Rank II
Percentage use of chromate-free steel plates (in parts designed by Ricoh)	About 80%

- GPN Rank A, lead-free in 50% or more
- GPN Rank II, 50% or more have been replaced with alternatives

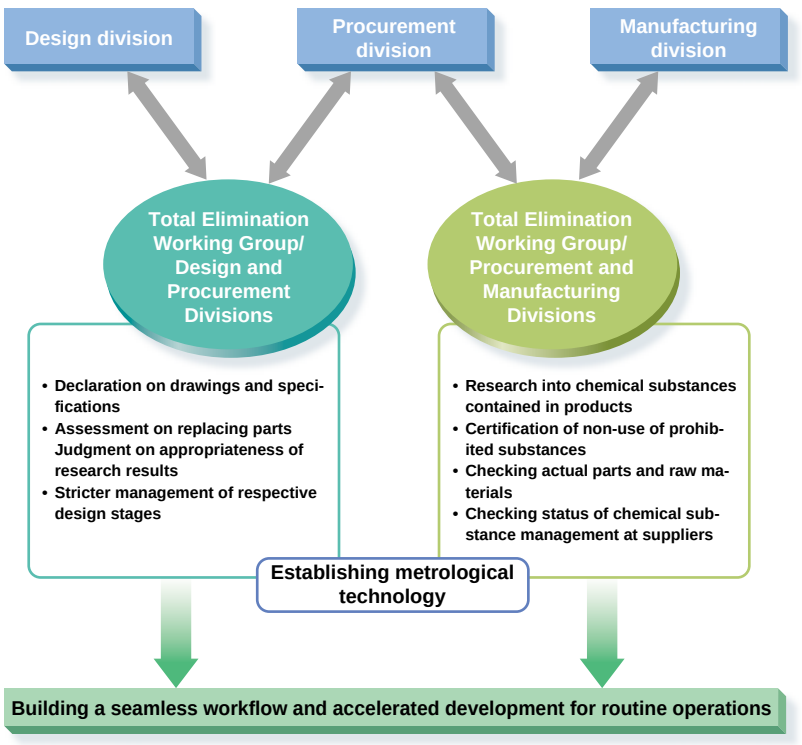
* GPN (Green Purchase Network)
http://www.gpn.jp/ (Japanese language only)

Substances Prohibited by Ricoh, Substances No Longer Used under the Action Program, RoHS Directive*



* EU Restriction of Hazardous Substances Directive: An EU directive to restrict uses of specific chemical substances for electric and electronic instruments, which came into effect in 2003. Regulations will start on July 1, 2006.

Establishing a System to Manage Chemical Substances Contained in Products



Support for Establishing EMS at Suppliers

<Ricoh Group/Global>

Partnerships with suppliers are important in providing customers with products with less environmental impact. The Ricoh Group has supported the establishment of EMS at suppliers, aimed at our preference for the use of parts with less environmental impact, manufactured at plants with less environmental impact. The group's major suppliers all over the world had put EMS into full operation by May 2003.

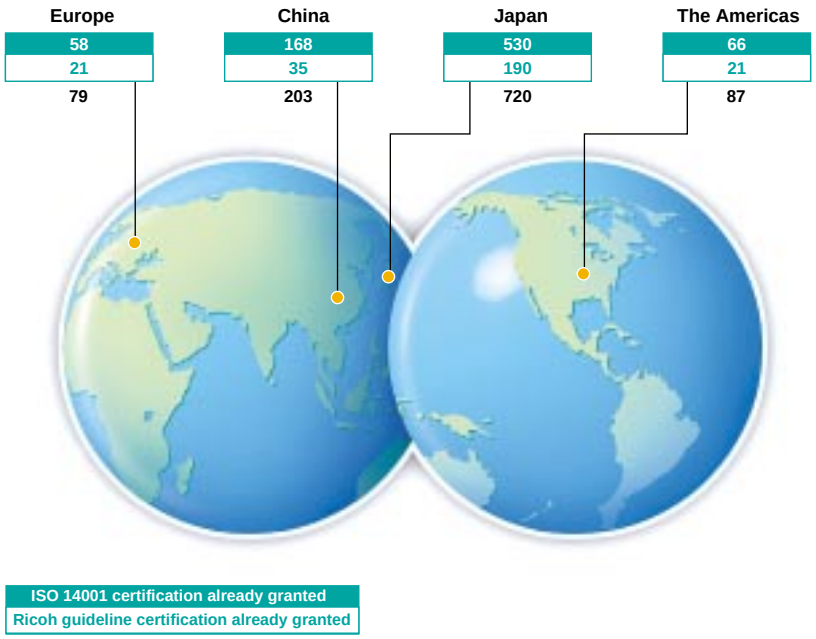
Completely Eliminating Use of Chemical Substances through Partnerships

<Ricoh Group/Global>

The Ricoh Group has been promoting activities to completely eliminate the use of four prohibited substance groups in partnership with suppliers since fiscal 2002. The Group has jointly developed alternatives that do not contain lead, hexavalent chromium, polyvinyl chloride, or cadmium, while sharing information on chemical substances contained in parts with suppliers through databases. It has also requested the presentation of a certification of non-use of prohibited substances, and supported the establishment of a system to avoid mixing prohibited substances into parts and materials or other manufacturing processes at suppliers. The Ricoh Group is introducing the know-how it has built up in Japan into production bases in China*, as well as other base worldwide, aiming at complete elimination of the use of these substances by the end of fiscal 2004. Thus we are aiming to establish a global production system ahead of the EU's RoHS.

* See page 51.

Green Procurement Across the World
(Establishment of EMS at suppliers as of May 2003—Total number of suppliers: 1,089)



Improving End User Comfort Levels

Ricoh conducts effective in-company measurement of noise, sharing the results with the design division for rapid improvements in designs, to make copiers or other machines more comfortable to use. In addition to the noise measurement laboratory which obtained certification from the NIST* in the United States in 2002, three new laboratories were established in fiscal 2003 for the measurement of VOCs.

* National Institute of Standards and Technology. The noise measurement laboratory at Ricoh's Omori Office obtained ISO/IEC 17025 certification from the NIST, which guarantees that the laboratory can provide internationally-reliable data.

Noise measurement laboratory