

# Reducing the Risk of Chemical Substances

Konica Minolta is ahead of the global management of chemical substances by undertaking initiatives that minimize the risks entailed in the use of chemicals.

## Basic Concept

There is international agreement on the need to take steps to minimize the adverse effects on human health and the environment when companies manufacture or use chemical substances. Beginning with the REACH regulations\*1 in Europe, a movement is now underway, in Japan and the U.S. as well, to revise regulations of chemicals, which requires companies to manage chemical substances at a higher standard.

Taking the lead in making these changes, the entire Konica Minolta Group is working to reduce its use of harmful chemicals or to eliminate them completely. The Group is focused on executing advanced evaluation of chemical risks, reducing the emission of harmful substances into the atmosphere, eliminating hazardous substances from production processes and products, and improving safety management for workers and product users.

\*1 REACH regulations: The EU consolidated its earlier regulations concerning chemical substances, and in June 2007, enacted new regulations for the registration, evaluation, authorization and restriction of chemicals.

## Targets and Results for Fiscal 2008

In response to the fiscal 2008 target of 90% reduction in total atmospheric emissions of volatile organic compounds (VOCs) compared to fiscal 2000 (calculated based on risk conversion), Konica Minolta achieved a 92% reduction. Furthermore, the Group made on-schedule progress towards completing its management system of chemical-containing products in compliance with REACH regulations.

## Reduction of Atmospheric Emissions of Harmful Substances

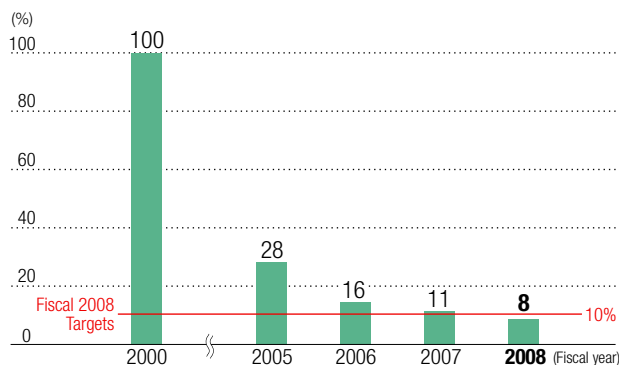
With respect to the chemical substances used in the factories, since 1993, Konica Minolta has set a target for the reduction of total atmospheric emissions of volatile

organic compounds (VOCs), prioritizing several types of VOCs that are deemed particularly risky in terms of hazard and amount used. The Group completely eliminated the use of particularly hazardous substances (benzene, formaldehyde, chloroform and so on) by fiscal 2004. Furthermore, starting from fiscal 2005, Konica Minolta has developed its initiatives to reduce the use of chemicals based on its unique risk management indicators\*2.

The various Group companies introduced alternative technologies and adopted measures to prevent evaporation and to improve manufacturing processes. Their steady and continuous efforts resulted in reductions of VOCs that significantly exceeded the target in fiscal 2008.

\*2 Risk management indicator: An indicator of the impact of VOCs released into the atmosphere based on the sum of the risk of direct impact on human health and the risk of atmospheric pollution.

Changes in Total Atmospheric Emissions of VOCs (Compared to Fiscal 2000 Level and Based on Risk Conversion)



## Future Targets

From fiscal 2009 going forward, Konica Minolta will expand the scope of reductions in atmospheric emissions of harmful substances from substances that pose a direct risk to human health to include substances that pose an environmental risk as well. The Group will take further steps to reduce chemical risks with the view of achieving the Medium-Term Environmental Plan 2015. (See page 11.)

### Targets and Results for Fiscal 2008

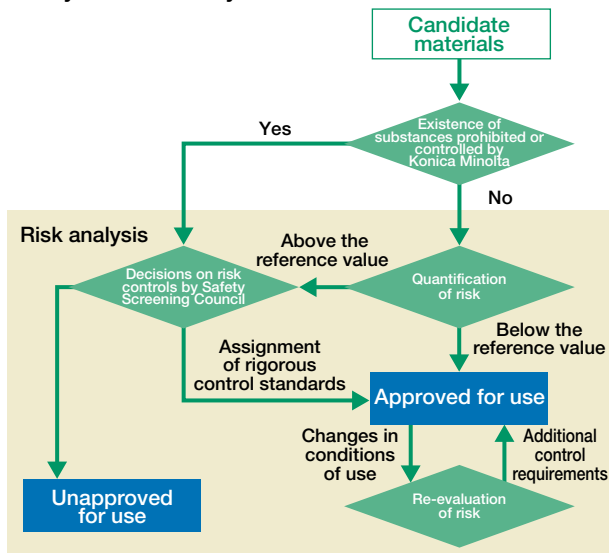
Targets	Results	Target achieved
Reduce total atmospheric emissions of VOCs (risk conversion) by 90% compared with fiscal 2000	Reduce total atmospheric emissions of VOCs by 92% compared with fiscal 2000	✓
Establish a system for management of chemicals in products to comply with REACH regulations	[Chemicals] Completion of pre-registration [Equipment products] Establishment of a data management system	✓

## Advanced Evaluation of Chemical Risks

Konica Minolta has established the Safety Verification System for the advanced investigation of risk management relate to the adoption of new chemicals. When the Group cannot avoid using a chemical that poses a high degree of risk, the safety screening meeting is convened to establish rigorous requirements of control.

In fiscal 2008, the Group revised the system to make

### Safety Verification System



it possible to re-evaluate the risk of a given chemical according to changes in the amounts used and the conditions of use. This has enabled greater rational risk assessment that considers product safety, environmental protection, and occupational safety.

## Green Procurement

Konica Minolta implements green procurement on a global scale, evaluating the contained chemical substances of parts and materials, and giving priority to product purchases with a lower environmental impact. It defines prohibited substances and reportable substances from the point of view of legal compliance and environmental responsibility for use of products such as MFPs and printers. The Group is working to reduce or eliminate chemical substances from its production processes and products, which have an adverse impact on human health and the environment.

Moreover, the Group has completely eliminated the substances subject to control under the European RoHS Directive\*<sup>3</sup> from most of its new products launched since 2005, and is taking steps to eliminate these substances from the rest of its products. Konica Minolta plans to make reductions in the substances of very high concern (SVHC) in the REACH regulations.

\*<sup>3</sup> RoHS Directive: Regulations enacted by the EU in July 2006 restricting the use of certain hazardous substances in electrical and electronic equipment.

## TOPICS

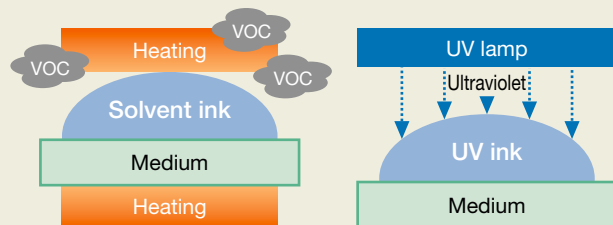
### UV\*<sup>4</sup> Ink for Ink Jet Printers

Typically, solvent inks are used for printing signs and displays such as advertisement placards and wrapping film. The principal constituent of solvent inks is organic solvent and when the inks are printed, the organic solvents are volatilized in the atmosphere as VOCs.

In order to solve this problem, Konica Minolta IJ Technologies, Inc. focuses on UV curable ink for printers that is dried and fixed with ultraviolet irradiation instead of heating. By using cationic polymerization inks that can be cured with low-level irradiation, printers can be equipped with irradiation lamps that consume little power. The odor of the printout is also reduced. Furthermore, Konica Minolta has also developed its own unique ink materials which result in enhanced curability and environmental performance.

\*<sup>4</sup> UV: ultraviolet

### Comparison of Solvent Ink and UV Ink



	Solvent ink	UV ink
Fixing	Heating and drying (slow)	Ultraviolet irradiation (fast)
VOC	Yes	No
Printable media	Poly Vinyl chloride, PET etc	Poly Vinyl chloride, PET, metal, glass etc