

Reducing Chemical Substance Transfer

Hitachi Chemical actively promotes the reduction of chemical substance release by installing solvent recovery systems and altering manufacturing methods.

Reducing Chemical Substance Transfer

Since 1994, the Hitachi Chemical has been voluntarily working to reduce the amount of chemicals released from our premises. We selected chemical substances that are subject to our management program and maintain a record of their release amounts. When the PRTR* Law was implemented and the disclosure of information on applicable chemical substances became obligatory in 2000, the Hitachi Chemical Group set numerical targets to reduce the release of chemical substances that are subject to PRTR, as well as for our voluntary management. As a result of our efforts to meet targets, the total amount of chemical substances released in fiscal 2003 was reduced to 59% of 2000 levels, achieving the goal for fiscal 2005 (70% or lower of 2000 levels) well ahead of schedule. When compared with the previous year, substantial levels of reduction were achieved for the three major high-release

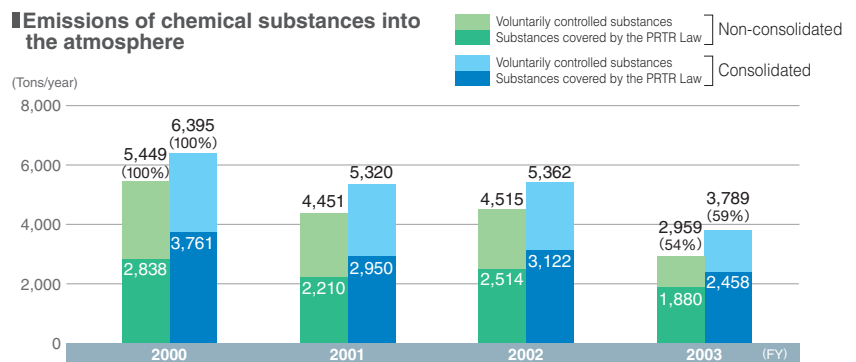
substances (ethylene glycol monomethyl ether, N,N-dimethylformamide, and methyl ethyl ketone), owing to the installation of solvent recovery and purification systems. The total release of chemical substances to the atmosphere in fiscal 2003 was 30% lower than the previous year.

Hitachi Chemical has set a goal to reduce its chemical release to 30% or lower of 2000

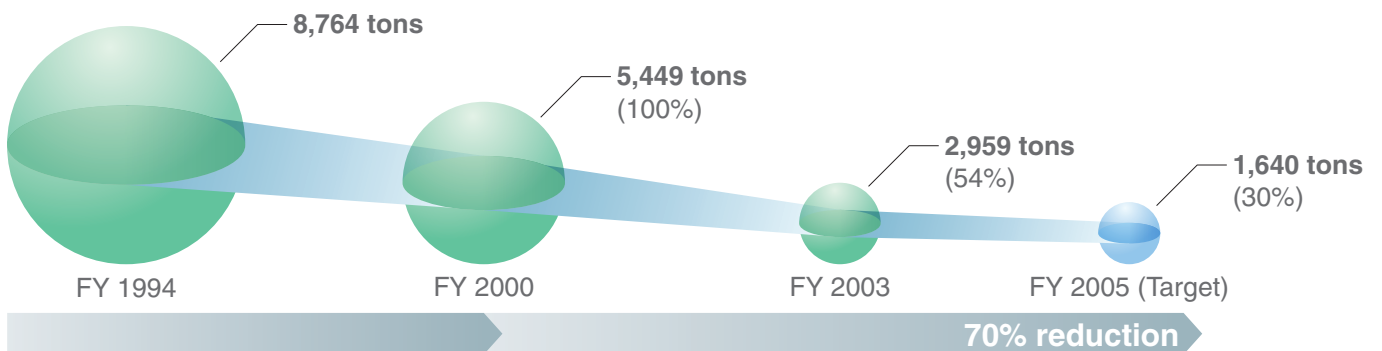
levels by fiscal 2005. This is to further contribute to the reduction of chemical releases into the atmosphere by the whole group. Chemical releases into the atmosphere by Hitachi Chemical in fiscal 2003 amounted to 54% of fiscal 2000 levels.

* PRTR: Pollutant Release and Transfer Register.
PRTR Law: The Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (enacted July 1999).

■ Emissions of chemical substances into the atmosphere



■ Emissions of chemical substances into the atmosphere (Non-consolidated basis)



Approaches at Manufacturing Works

■ Installation of Solvent Recovery and Purification Systems (Shimodate Works, 2003)

The Shimodate Works has been working on reducing chemical substance releases from manufacturing processes since 1996, when they acquired an environmental ISO certificate. Following the installation of the first solvent recovery and purification system in 1998, operation of a second system was started in fiscal 2003. Since then, the amount of chemical substances released into the air has been dramatically cut. The recovered substances are purified and recycled into the manufacturing process, contributing significantly to the reduction of purchases of new substances as well as the reduction of odors in the surrounding area.



Solvent Recovery and Purification System

Next Step

In addition to taking measures to recover released chemical substances, we are working to develop new products that emit lower amounts of substances and also reviewing our manufacturing processes in order to further reduce chemical releases.

■ The Group's amounts of major chemical substances handled, emitted into the atmosphere, and transferred

No.	Category	Chemical substances	CAS No	FY 2003 (tons/year)		
				Amount handled	Emissions	Amount transferred
1	Substances covered by the PRTR Law	Toluene	108-88-3	8,593	1,881	551
2		Ethylene glycol monomethyl ether	109-86-4	1,097	331	232
3		N,N-dimethylformamide	68-12-2	807	25	101
4		Formaldehyde	50-00-0	4,331	14	30
5		Xylene	1330-20-7	2,556	41	64
6		Styrene	100-42-5	43,320	87	182
7		Methyl methacrylate	80-62-6	3,557	6	8
8		Ethylbenzene	100-41-4	1,701	14	59
9		Isoprene	78-79-5	1,512	2	0
10		Acrylonitrile	107-13-1	512	3	0
11		Maleic anhydride	108-31-6	7,289	2	3
12		Phenol	108-95-2	5,736	2	56
13		Phthalic anhydride	85-44-9	3,196	0	1
14		Tetrahydromethylphthalic anhydride	11070-44-3	4,226	0	43
Other PRTR substances				49,351	50	381
Subtotal				137,784	2,458	1,711
15	Voluntarily controlled substances	Methylethylketone	78-93-3	4,607	959	659
16		Methyl alcohol	67-56-1	1,327	68	10
17		Acetone	67-64-1	5,994	47	180
18		Ethyl acetate	141-78-6	2,447	207	72
19		Methyl isobutylketone	108-10-1	179	15	2
20		Cyclohexane	110-82-7	542	17	1
21	N-methylpyrrolidone	872-50-4	1,607	0	3	
Other voluntarily controlled substances				27,960	18	94
Subtotal				44,663	1,331	1,021
Total				182,447	3,789	2,732

Control of Hazardous Chemical Substances

Specific Chlorofluorocarbons and Chlorinated Organic Solvents

By 1994 we had completely discontinued the use of specific chlorofluorocarbons (CFCs), which were used as expanding agents and detergents, by replacing them with alternative foaming agents and detergents.

For example, trichloroethylene and other chlorinated organic solvents, which were used as detergents, were replaced with safer substances in 1996. The use of carbon tetrachloride, which had been used to remove contaminants, was totally discontinued in 1995.

Dioxins

The incinerators at Hitachi Chemical's facilities are subject to the Law Concerning Specific Measures against Dioxins. The concentration of dioxins in the smoke emitted from our incinerators is lower than the legal standard (10ng TEQ/m³).

Polychlorinated biphenyls (PCBs)

We store transformers and capacitors containing PCBs securely in special containers and facilities under appropriate control to prevent any loss or leakage of PCBs.

Prevention of Soil and Groundwater Pollution

Trichloroethylene was once used as a detergent at the Hitachi Chemical Group sites. After use of this substance was discontinued, we conducted a survey of the soil and groundwater in those premises for possible contamination. At areas where some residue was found, decontamination measures have been taken under the

supervision of local governments. In February 2003, when the Soil Contamination Countermeasures Law was enacted, another survey of soil and groundwater was carried out following legal standards. Further decontamination measures have been taken at any areas where the survey revealed remaining contamination. As of today, the

decontamination processes have either been completed or are expected to be completed within a specific time frame, indicating no serious concern. Hitachi Chemical is committed to continuously monitoring the soil and groundwater at all of its sites.