

Eco-Factories—1

Preventing Pollution by Chemical Substances

Targets for 2005

Chemical substances released into the atmosphere
 Non-consolidated: no more than 15% of 2000 levels
 Consolidated: no more than 25% of 2000 levels

Results for 2005

Non-consolidated: 23%
 Consolidated: 32%

Targets for 2006

Non-consolidated: 15% or less
 Consolidated: 30% or less

Reducing emissions of chemical substances

The Hitachi Chemical Group set targets in its Environmental Protection Action Plan for reducing the emissions of controlled chemical substances to no more than 10% on a non-consolidated basis and no more than 30% on a consolidated basis in 2007 against 2000 levels. The Group works on reducing voluntarily controlled chemicals such as methylethylketone and acetone in addition to substances covered by the PRTR* Law.

In 2005, chemical substances emitted into the atmosphere amounted to 1,232 tons on a non-consolidated basis and 2,036 tons on a consolidated ba-

sis, representing 23% and 32%, respectively, compared to 2000. This was achieved by effectively using raw materials, converting to new production methods, and using activated carbon absorption, cooling, condensation, absorption, and membrane separation to collect substances in the production process.

We were not able to achieve the targets for 2005 due to the increased production volume, although we have achieved reductions of 6% and 16% on a non-consolidated and consolidated basis, respectively. However, we are striving to achieve the targets for 2007 by increasing the use of alternative materials, improving manufacturing facili-

ties, establishing alternative processes, and introducing treatment technologies and facilities.

* PRTR (Pollutant Release and Transfer Register) Law: The law concerning reporting, etc. of releases to the environment of specific chemical substances and promoting improvements in their management.

Control of hazardous chemical substances

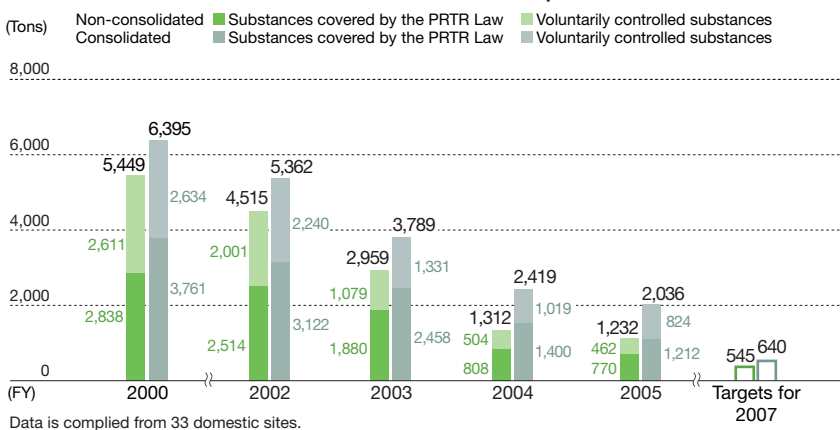
Every year the Hitachi Chemical Group investigates and reviews the status of the storage of transformers and capacitors containing polychlorinated biphenyls (PCBs) and reports the results by each manufacturing site.

The Group securely stores transformers and capacitors containing PCBs in special containers and facilities under appropriate controls to prevent any PCB loss or leakage. Disposal treatment will be outsourced to external facilities and all PCBs will be properly treated and disposed of by July 2016. The use of specific chlorofluorocarbons, carbon tetrachloride, and organic solvents was completely discontinued in 1994, 1995, and 1996, respectively.

Preventing air pollution

The Hitachi Chemical Group deploys all possible means to reduce the emissions of sulfur oxide (SOx), nitrogen oxide (NOx) and soot and dust, as well as

Emission of chemical substances into the atmosphere

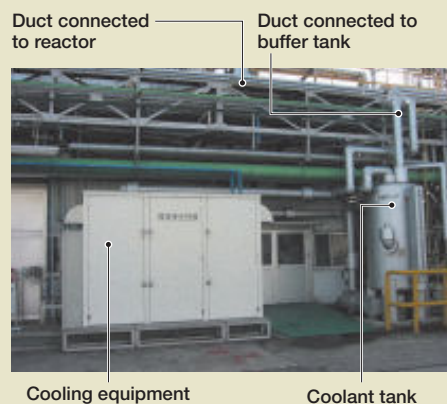


Reducing emission of chemical substances by introducing an acetone recovery system

Yamazaki Works of Hitachi Chemical, which produces functional resin materials, introduced an acetone recovery system that applies cold condensation to reduce emissions of acetone and odors.

The system recovers acetone using a reactor and buffer tank. Ultracold condenser (-60°C) is installed in the exhaust gas line of the reactor. Acetone contained in exhaust gas con-

denses by cooling and is returned to the reactor. Ultracold condenser is also installed at the outlet of the buffer tank so that acetone scattered in the duct condenses and is returned into the tank. As a result of introducing this recovery system, we significantly reduced acetone released from our sites, as well as acetone consumption by recycling recovered acetone.



Acetone recovery system (Cooling equipment and coolant tank for condensing acetone)

volatile organic compounds (VOC).

SOx emissions by the Hitachi Chemical Group in 2005 amounted to 19,000 Nm³ on a non-consolidated basis and 52,000 Nm³ on a consolidated basis. NOx emissions by the Group in 2005 totaled 178,000 Nm³ on a non-consolidated basis and 322,000 Nm³ on a consolidated basis. Discharge of soot and dust by the Group was 19 tons on a non-consolidated basis and 28 tons on a consolidated basis. These results were due to converting to a different type of fuel in the combustion facilities, improving the efficiency of production equipment, reducing fixed energy consumption, and enhancing the performance of dust collectors.

In accordance with the provisions of the Amended Air Pollution Control Law, which was enforced in April 2006 and restricts VOC emissions, the Group reported to the government about the facilities regulated under the law. The Group has been measuring VOC density in substances emitted from facility vents into the air and implementing controls to keep these emissions within the regulated standards. The Hitachi Chemical Group will continue to apply its utmost efforts to reduce the emission of VOC and other hazardous substances into

the air in compliance with VOC emission standards.

Preventing water contamination

The Hitachi Chemical Group biologically treats the wastewater generated by production processes and stores the wastewater in a final effluent tank before releasing it into the public sewage system. The treated water in the tank is continuously measured and inspected for BOD (biological oxygen demand), COD (chemical oxygen demand) and other factors, ensuring that the concentration of indexed substances fully complies with legal standards. In 2005, the Group discharged 5,203 km³ of wastewater on a non-consolidated basis and 12,506 km³ on a consolidated basis into public waters, with 252 km³ on a non-consolidated basis and 2,236 km³ on a consolidated basis released into sewage systems. In the same year, the Group released 27 tons of BOD on a non-consolidated basis and 167 tons on a consolidated basis, as well as 43 tons of COD on a non-consolidated basis and 451 tons on a consolidated basis.

Preventing pollution of soil and underground water

The Hitachi Chemical Group previously used chlorinated organic solvents, primarily for cleaning. We began surveying soil and underground water

pollution in 1991 and have been monitoring the progress of purification at sites where pollution was detected in 1993. With just a few exceptions, the purification of soil and groundwater has been completed.

While purification is expected to be completed soon at the remaining sites as well, we intend to continue monitoring the soil and underground water and to prevent contamination.

Response to complaints by local residents

In 2005, the Hitachi Chemical Group received five complaints from local residents related to odor, noise and wastewater associated with production activities at its manufacturing sites. The Group promptly investigated these complaints, identified their causes, and implemented the necessary measures, such as more frequent inspections of the related sites, reviewing inspection standards, replacing equipment parts, and introducing treatment facilities. The Group reported the status of improvements and preventive measures to the residents who had brought the complaints and also reported to the general public through such forums as meetings hosted at the sites.

Nature conservation activity for the Kinugawa River

Shimodate Works of Hitachi Chemical utilizes an industrial water treatment facility to make every effort to prevent wastewater generated at the Works from polluting the river. The Works supports conservation of the Kinugawa River's natural environs based on an agreement with the Kinu-Kokai Fisheries Cooperative in Ibaraki Prefecture governing the discharge of wastewater from the Works and the protection and breeding of fish.



Release of juvenile salmon into the Kinugawa River in February 2005

New technology for soil contamination measurements: ROTAS onsite soil toxicity inspection system

Hitachi Chemical began selling Rapid Onsite Toxicity Audit System (ROTAS), its onsite soil toxicity inspection system, in the domestic market in partnership with a British company, Cybersense Biosystems. The system boasts the advantage of rapidly measuring soil contamination levels at low cost and is capable of assessing up to 22 samples in approximately 90 minutes. It enables onsite measurement of soil contamination in a variety of locations and is being used for large-scale contaminated soil purification projects. Since users require no specific knowledge for conducting analysis, the system is an effective tool for voluntary assessment of grounds surrounding manufacturing plants and

homes. This outstanding system applies the method of measuring changes in the luminescence intensity of luminescent bacteria that exist in nature. This method, which has been used for more than twenty years to measure water pollution levels, has been highly evaluated by users worldwide.

