

What Measures are Taken to Manage Chemical Substances?

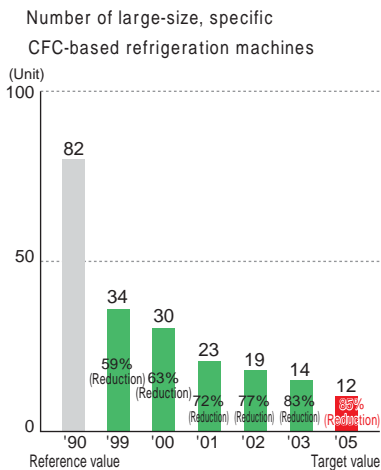
In the use of chemical substances, we must consider the potential effect such substances have on the human body and the ecological system. Aside from complying with all applicable laws and regulations, JR East has set its own voluntary targets to reduce the use and discharge of hazardous substances, and to substitute chemicals with low profile alternatives.

Reducing Emissions of Chemical Substances

Reducing substances that deplete the ozone layer

Air conditioning systems using specific chlorofluorocarbons (CFCs) that deplete the ozone layer are now being gradually replaced with new systems that use alternative refrigerants. At the end of FY 2003, the number of specific CFC-based air conditioning systems for buildings had been reduced to 14 units (compared to 82 at end of 1990). CFC-substitute air conditioning is now the rule on most trains except some diesel cars and passenger cars; using 95 tons of CFC substitute as of the end of FY 2003 while specific CFCs used was 2 tons. We periodically check for gas leaks and recover CFCs when scrapping railcars as mandated by law.

At the end of FY 2003, 71 tons of halon gas was being used as a fire-extinguishing agent. Powder or CO₂ fire-extinguishing agents are now being introduced in new facilities and replacing CFC equipment when old facilities are renovated.



Status of chemical substance management

JR East uses chemical substances primarily when painting and repairing railcars. Use and management of these chemicals are strictly regulated to prevent leaks and other hazards. Since FY 2001, as an enterprise handling more than a certain amount of specified chemical substances, 19 of our business locations now report volumes of emissions and transfers to the appropriate prefectural authorities in compliance with PRTR*1.

We are also introducing more railcars with stainless steel bodies that require no painting. At the end of FY 2003, 58% of 10,478 railcars of conventional lines were stainless steel cars. Organic solvents are used in painting railway facilities other than rolling stocks, and in FY 2003, 474 tons was used.

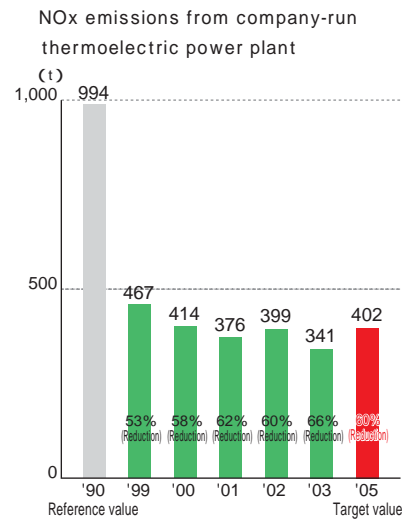
Notified volume released and transferred in 19 business locations

Name of chemicals	Level of emissions into atmosphere (kg)	Amount transferred to sewers	Amount transferred to outside the facilities
2-Aminoethanol (kg)	1	1,300	0
Bisphenol A type epoxy resin (kg)	0	0	1,300
Ethylbenzene (kg)	4,970	0	1,420
Ethylene glycol (kg)	0	0	22,316
Xylene (kg)	40,770	9	3,203
Chromium and chromium (III) compounds (kg)	0	0	130
1,1-dichloro-1-fluoroethane (kg)	2,300	0	0
Dichloromethane (kg)	8,600	0	2,700
Styrene (kg)	4,470	0	100
Dioxins (mg-TEQ)	19	0	32
o-toluidine (kg)	0	0	72
Toluene (kg)	28,670	11	19,840
m-tolylene diisocyanate (kg)	1,300	0	110
4,4'-methylene dianiline (kg)	0	0	160

Note: There were no discharges to soil, landfill disposals, or discharges in public water bodies.

Efforts at thermoelectric power plant

Fuels with a relatively low environmental impact such as city gas, kerosene, and low-sulfur heavy oil are used at the company-run Kawasaki Power Plant. However, these fuels emit nitrogen oxide (NOx), sulfur oxide(SOx), and smoke dust, and therefore we use denitration equipment and dust separators to reduce their emissions. The NOx emission level in FY 2003 was 341 tons, which continuously met our goal of 60% reduction over FY 1990 level for FY 2005 since FY 2001.



Management of polychlorinated biphenyls (PCB)

JR East is replacing PCB used as insulation oil in equipment for railcars, substations, etc. with non-PCB substitutes. The removed PCB (about 2,200 tons of equipment weight) is under strict management in storage and has been reported to the authorities as stipulated by law. We are examining the processes of detoxifying the stored PCB.

*1 PRTR (Pollutant Release and Transfer Register)

The Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in their Management; The objective of the law is to promote the assessment and control of emissions of hazardous chemical substances into the environment and prevent the negative impact on the environment from such substances.