

► Chemical Management

How Does the JR East Group Manage Chemical Substances?

When using chemical substances, it is important to consider closely their impacts on the human body and ecosystems. In addition to complying with all applicable laws and regulations, JR East has set its own voluntary targets to reduce the use and release of hazardous substances, and is making an effort to use lower-impact alternative substances.

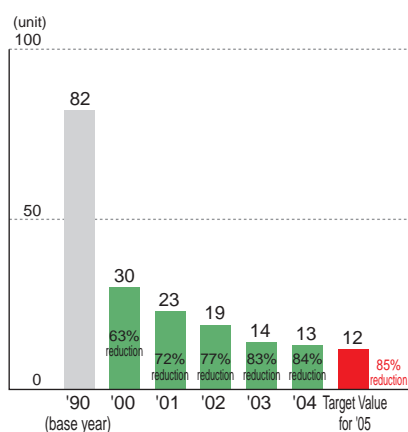
Reducing the Use and Releases of Chemical Substances

Tackling ozone-depleting substances

JR East is steadily replacing air conditioning equipment that uses specified chlorofluorocarbons (CFCs, which are known to deplete the Earth's ozone layer) with new equipment that uses non-CFC refrigerants. By the end of fiscal 2004, we succeeded in reducing to 13 the number of units still using specified CFCs (down from 82 in fiscal 1990).

At the end of fiscal 2004, we were using CFC-substitutes in all electric railcars, though not yet in some diesel trains and railcars; specified CFCs used in railcars amounted to 2 tons, while CFC-substitutes amounted to 94 tons. We routinely check for gas leaks, and when scrapping used railcars we recover the refrigerants, as required by laws and regulations. 62 tons of halon gas were still in use as a fire-extinguishing agent, but we are steadily replacing this with non-halon agents (i.e., powder, carbon dioxide, etc.) when building new facilities or renovating existing ones.

► Number of large refrigerators using specified CFCs



State of chemical management

JR East uses chemical substances primarily when painting, maintaining and repairing railcars, and we take rigorous steps in their use and management in order to prevent leakages and other hazards. In compliance with Japan's PRTR Law,^{*1} 19 JR East facilities have reported release and transfer data of the specified chemical substances to local authorities since fiscal 2001.

We are also introducing railcars with stainless steel bodies that do not require painting, and by the end of fiscal 2004 we had increased this type to 61% of the 10,776 railcars in operation on our conventional rail lines.

Besides being used in rolling stock, organic solvents are utilized for painting and so on in railway facilities, amounting to 168 tons in fiscal 2004.

► Reported releases and transfers from 19 JR East facilities

Name	Releases to atmosphere (kg)	Releases to public waters (kg)	Releases to sewerage system (kg)	Transfers off-site (kg)
2-Aminoethanol (kg)	110	42	1,937	14
Bisphenol A type epoxy resin (kg)	0	0	0	1,756
Ethylbenzene (kg)	5,648	0	0	682
Ethylene glycol (kg)	0	0	0	16,068
Xylene (kg)	42,002	0	7	1,775
Chromium and chromium (III) compounds (kg)	0	0	0	125
1,1-dichloro-1-fluoroethane (kg)	2,277	0	0	0
Dichloromethane (kg)	8,665	0	0	2,981
Styrene (kg)	2,416	0	0	0
Dioxins (mg-TEQ)	10	0	0	15
o-toluidine (kg)	0	0	0	100
Toluene (kg)	30,942	0	7	15,134
m-tolylene diisocyanate (kg)	1,216	0	0	128
4,4'-methylenedianiline (kg)	0	0	0	217
Manganese (kg)	0	0	0	38

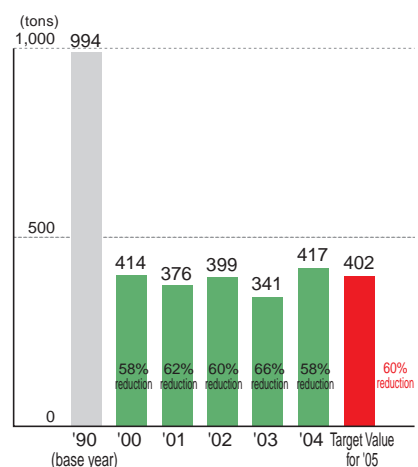
Note: There were no releases to soil and no disposals to landfill in the course of this fiscal year.

Efforts at the JR East thermal power plant

Fuels with a relatively low environmental impact – such as city gas, kerosene, and low-sulfur heavy oil – are used at the thermal power plant in Kawasaki, operated by JR East. Because the plant's emissions contain nitrogen oxides (NOx), sulfur oxides (SOx), and soot, however, we use NOx-removal equipment, dust separators, and other equipment to reduce emissions of these pollutants.

As a result of the Niigata-Chuetsu Earthquake in fiscal 2004, JR East's hydropower station was shut down. The resulting increase in operating hours at the thermal power plant resulted in an increase of 417 tons NOx emissions.

► NOx emissions from JR-East's thermal power plant



Control of PCBs

JR East is using non-PCB substitutes to replace the polychlorinated biphenyls (PCBs) that were being used as insulating oil in railcar equipment, transformers and elsewhere. We are storing the used PCBs (contained in equipment and estimated at 2,200 tons in weight) under stringent conditions, reporting details to the authorities as stipulated by law. We are currently considering how to detoxify, and subsequently dispose of, the stored PCBs.

*1 PRTR Law

PRTR stands for "pollutant release and transfer registers." The formal name for this law is Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in their Management. The law promotes the assessment and monitoring of harmful chemical substance emissions, and encourages preventive measures to avoid negative environmental impacts.