

# Chemical substance management

## Compliance with laws and setting goals for reduction of chemical substances

When using chemical substances, the effects on human health and ecological systems must be fully considered. The JR East Group not only rigidly adheres to established base values, but sets its own ambitious targets as well. As much as possible, we restrict the use of such substances and adopt environmentally responsible substitutes.

## Reducing and replacing ozone depleting substances

We endeavor to reduce the use of substances specified as controlled substances under the Ozone Layer Protection Law and adopt environmentally friendly substitutes.

- Large heat exchangers (Large refrigerators) - Having steadily replaced air conditioning units using specified chlorofluorocarbons (CFCs) with systems that do not use them, we completed the removal of such units from buildings by the end of March 2008.
- Rolling stock - Except for some diesel railcars, all of our cars use CFC substitutes. As of March 2010, we were using 88 tons of CFC substitutes and only 0.5 ton of CFCs. We routinely check for gas leaks, and collect the refrigerants when scrapping retired railcars in accordance with applicable laws and regulations.
- Fire-extinguishing agent - Although 65 tons of halon gas was still in use as a fire-extinguishing agent as of March 2010, we have it under proper control and are replacing it with non-halon agents (such as powder agents and CO<sub>2</sub>) when building new facilities or renovating existing ones.

## Chemical substance management

As JR East uses chemical substances primarily for painting and repairing our railcars, we take rigorous steps for their use and management in order to prevent their leakage. We are a company that handles a considerable amount of specified chemical substances, and 14 JR East facilities submitted the data regarding the release and transfer of these substances to relevant authorities in the fiscal year ended March 2010, pursuant to the PRTR Law.\*

We are also promoting the introduction of stainless steel railcars that do not require painting. At the end of March 2010, as many as 79% of the 10,770 cars operated on our conventional lines were stainless steel railcars. Beside their use for railcars, we used 457 tons of organic solvents for painting railway facilities and stabilizing track beds in the fiscal year ended March 2010.

\*PRTR stands for "pollutant release and transfer registers." The formal name of this law is Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof. The law encourages the assessment and control of toxic chemical substances emitted into the environment and measures to prevent negative impact on the environment.

### ■ Amount released and transferred from 14 reporting-required facilities

Chemical substance	(kg)			Chemical substance	(kg)		
	Released into air	Released into sewerage	Transferred to other facilities		Released into air	Released into sewerage	Transferred to other facilities
2-Aminoethanol	0	0	150	Xylene	26,990	0	4,067
Condensation polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (Bisphenol A Type Epoxy Resin) (liquid only)	0	0	2,900	Chromium and Chromium(III) compounds	0	0	46
4,4'-methylenedianiline	0	0	350	Dichloromethane (Methylene chloride)	4,200	0	2,500
o-toluidine	0	0	170	Styrene	1,200	0	0
Ethylbenzene	2,500	0	1,800	Toluene	13,690	0	14,564
Ethylene glycol	0	0	8,700	Nickel	0	0	0
				Molybdenum and its chemical compounds	0	0	0

\* Note:

There was no release to soil, public water supply or disposal by landfills.

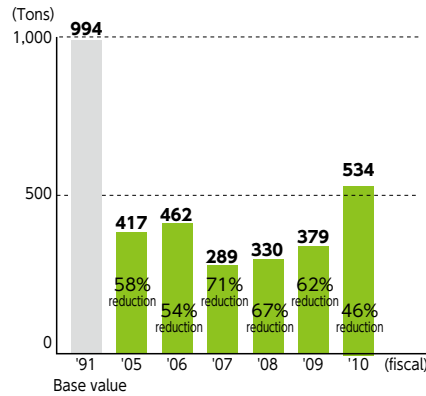
Among the substances for which reporting is required, those that were actually released or transferred are posted here.

### Reducing emissions from JR East's thermal power plants

We use natural gas, kerosene and Bunker C (low-sulfur heavy oil) at JR East's thermal power plants. When these fuels burn, however, nitrogen oxides (NOx), sulfur oxides (SOx), and particulate matter (PM) are emitted. In the fiscal year ending in March 2010, increases to the operating rates at our thermal power plants resulted in increased NOx emissions.

We endeavor both to control the generation of these substances and to reduce the total amount of emissions by installing denitrification equipment, low-NOx burners and dust collectors at the plants.

■ NOx emissions from JR East's thermal power plants



### Management of PCBs

Equipment containing PCB's is securely stored at 82 locations and reports on it are filed as required by laws and regulations. We neutralize this equipment to the extent that can be done by PCB waste treatment facilities. In the fiscal year ended March 2010, we treated 409 units of equipment such as transformers and capacitors.