

Reducing Ozone Layer-depleting Substances

With the advance of global warming, ozone layer-depleting substances exert an adverse effect on the global environment. Specific CFCs and halon gases destroy the ozone layer, which results in an increasing intensity of UV radiation reaching the surface and generating a number of problems, such as a rise in skin cancer rates. JR East is actively working to reduce these specific CFCs and halon gases.

Item	Target year (fiscal 2005)	Fiscal 2001		Reference value (fiscal 1990)
		Performance	Performance value (remaining number)	
Specific CFC-based refrigeration machines	▲85%	▲72%	23 units	82 units

CFCs released from buildings and facilities

Certain types of CFCs are used as coolants in the air-conditioning systems of large buildings. For this reason, JR East is replacing its old facilities with ones that use no specific CFCs. From fiscal 1990 until fiscal 2001, by eliminating 59 specific CFC-based pieces of cooling equipment using a total of 28 tons of CFC, the number of specific CFC-based air-conditioning systems dropped to 23 units, and CFC were reduced to 10 tons. Since alternative CFCs have the same effect on global warming as greenhouse gases like CO₂, we began to introduce non-CFC water cooling and heating appliances and had installed 22 units by the end of fiscal 2001.

Alternative CFCs are also used as coolants in the rectifiers of transformer stations to prevent them from overheating. In fiscal 2001, JR East prepared a pure water boiling and natural cooling silicon rectifier in the Ueno Transformer Station and will introduce only non-CFC rectifiers when replacing old rectifiers with new ones. Furthermore, since SF₆ (sulfur hexafluoride), a greenhouse gas, is used to fill substation breakers, we take great care to prevent any gas leakage and also recover this gas carefully when removing it.

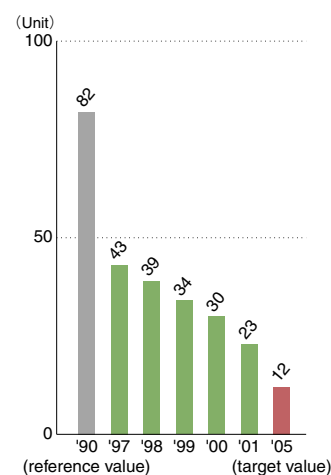
CFCs released from railcars

For the air-conditioning systems of our railcars, some diesel cars and passenger cars are equipped with specific CFC (R12)-based or alternative CFCs (R22, R134a and R407C) substitute-based air-conditioning systems. In the latest model of the E231 series, CFC R407C, which has no harmful effect on the ozone layer, is used. We endeavor to prevent these gases from leaking and periodically check for gas leakage. We recover CFCs during car scrapping in accordance with the Fluorocarbons Recovery and Destruction Law and process the discarded cars in the appropriate manner. At the end of 2001, 2 tons of specific CFCs and 96 tons of alternative CFCs were used.



CFC recovery system

● Number of large-size, specific CFC-based refrigeration machines



Halon gas

51 tons of halon gas in gas containers (used as a fire-extinguishing agent for buildings and facilities) is recovered and reused in coordination with the Halon Bank Promoting Committee when dismantling halon-using facilities. We are promoting the introduction of other fire extinguishing agents when renewing and newly installing fire extinguishing systems. For instance, fire extinguishing systems using powders and CO₂ have been introduced into Sendai Station and into snow pipes on the Joetsu Shinkansen Line, respectively.