



## Kashima Plant Working Certified as Green Heart Factory

In November 2011, the Kashima Plant was certified as a Green Heart Factory. This was the result of all employees making that all important extra effort and working together to systematically reduce environmental impact while strengthening relations with society.

Green Heart Factory: The system was introduced in fiscal 2006 to certify factories with outstanding environmental performance as Green Heart Factories. Plants that score at least 85 points out of 100 on seven criteria including reduction of environmental impact and relations with the local community are designated as Green Heart Factories.



Address	21, Sunayama, Kamisu, Ibaraki 314-0255, Japan
Site area	Approx. 247,000m <sup>2</sup>
Completed	April 1983
Employees	135
Main products	Fluorocarbon, monomers for plastic, fluoro-resin
ISO 14001 certified	January 1997
Latest ISO 14001 update	March 24, 2010
Bird's-eye view of Kashima Plant	

## Products Manufactured at Kashima Plant

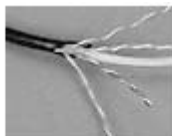
### ■ Fluoro-resin Products (Pellets and Powder)

The Kashima Plant makes Neoflon FEP, which has superb insulating properties and is widely used as a molding material, and Polyflon PTFE, which has the lowest friction coefficient among plastic raw materials and superior lubricity.

For their unique properties, fluoro-resin products are processed and used in a diverse range of applications.



Used on joints of tubes and pipes for its superior safety.



Used on LAN cables for its superior electrical properties.



Used in packing for its superior safety and sealing properties.

## Curbing Global Warming

### Recovering Fluorocarbons

In 1998, the Kashima Plant installed equipment for the destruction of recovered fluorocarbons so that it could carry out this activity on site.

Besides conducting thorough recovery and destruction of fluorocarbons generated during Daikin manufacturing, the Kashima Plant properly destroys the fluorocarbons that the Service Department recovers from customers and other outside entities.



### Destruction facilities for recovered fluorocarbon

After the fluorocarbons have been completely broken down at a combustion destruction temperature of 1,300°C, they are rendered harmless.

### Kashima Plant Gets AAA Rating Under Ibaraki Prefectural Government's Eco Business Registration System

In February 2011, the Kashima Plant was given the highest rating, AAA, under the Ibaraki Eco Business Registration System.\*

This rating is in recognition of widespread eco efforts, including energy-saving settings for air conditioning, the turning off of lights during lunch break, separation of garbage, reduction in copier paper use, periodic cleanups of local neighborhoods, waste reduction through in-house processing, and eco-driving. June of each year is Environmental Month, when employees strive to raise personal environmental awareness by placing slogans on their lockers. The Kashima Plant will continue to improve its environmental activities.

\* Ibaraki Eco Business Registration System: The Ibaraki prefectural government is aiming to create a society with maximum recycling and minimal environmental impact by registering companies with outstanding environmental performance as Ibaraki Eco Businesses.



## Energy Saving

### Energy Saving through Cogeneration Systems



Under a Daikin initiative, a cogeneration system was installed in the Hasaki Industrial Park for shared use by the companies there. The steam given off during power generation is harnessed in order to save energy.

### Energy-Efficient Chiller



A Daikin energy-efficient chiller was incorporated into equipment in the plant.

### Converting Equipment to Inverter Type



After surveying the load changes during equipment use, the plant converted two rotary machines with high capacity and large load changes to inverter type.

■ Steam Traps for Preventing Steam Leaks



The over 500 steam traps in the plant undergo regular inspections and upgrading so as to save energy.

■ Fluorocarbon-Free, Heat-Pump Vending Machines



The Kashima Plant replaced previous vending machines with fluorocarbon-free, heat-pump models.

## Reducing Waste

### Achieved Zero Waste Emissions

In August 2004, the Kashima Plant achieved zero emissions (recycling ratio of at least 99.5%).

■ Thorough Separation of Waste



Unnecessary items from production processes are separated for recycling.

■ Drying Sludge



To reduce the energy needed to transport sludge to the recycling plant, the sludge is sun-dried to reduce the water content and thus make it lighter.

## Preventing Air and Water Pollution

■ Recovering VOC Solvents



The VOC solvents used in the fluoropolymer manufacturing process are collected using activated charcoal to prevent them from being released into the atmosphere.

■ Water Treatment Facilities



All wastewater in the plant is channeled to a single location for purification. Daikin has stipulated an in-house standard value for plant wastewater that is stricter than legal limits. The plant works daily to ensure measurements for items such as COD and pH do not exceed in-house standard values.

## Preparing for Emergencies

### ■ Emergency Convening System



An emergency convening system brings together the people needed to carry out mass phoning of employees to confirm they are safe in case of accident or earthquake.

### ■ Stockpiling Emergency Materials and Equipment



To be ready for a wide range of emergencies such as earthquakes, fires, or chemical spills, the Kashima Plant has emergency materials and equipment stored.

### ■ Emergency Rescue Drills



With the cooperation of the Hasaki Fire Department, once a year drills are held in emergency rescue and use of equipment such as AEDs.

### ■ Fire Hydrant Usage Competition



The Hasaki Fire Department is invited for emergency situation drills at the Kashima Plant. Fire hydrants are used to make the drills more like an actual emergency.

### ■ Joint Fire Drills



Once a year, drills are held jointly with neighboring companies and the fire department so as to be prepared for a major disaster.

### ■ Earthquake Simulations



A special truck with an interior that can simulate earthquakes allows people to experience the terror of a natural disaster.

## Exchange with Local Communities

### ■ Daikin Instructors Visit Schools



Daikin employees visit nearby elementary schools to lead science lessons. Through experiments on surface tension, the children learn the joys of science and how scientific advances have helped our daily lives.

### ■ Factory Tours



Every year, members of the administrative board of Kamisu City take a tour of the Kashima Plant and present their opinions on the facilities, an event that strengthens bonds between the plant and the local community.

### ■ Summer Festival



One of the ways the Kashima Plant promotes local exchange is by inviting residents and members of the administrative board of Kamisu City to a Noryosai Bon dance festival. Prior to this festival, the plant takes local residents on tours of the facilities.

### ■ Daikin Field Opened to the Public



The Kashima Plant opens its playing field to the public on weekends and holidays. The semi-annual Kamisu City soft baseball tournament held here features hotly contested games.

### ■ Cleanup of Local Streets



On the 25th of each month, all plant employees pick up litter on the streets around the Kashima Plant. All employees also take part in the semi-annual cleanup of Hasaka Industrial Park sponsored by the local federation of companies.

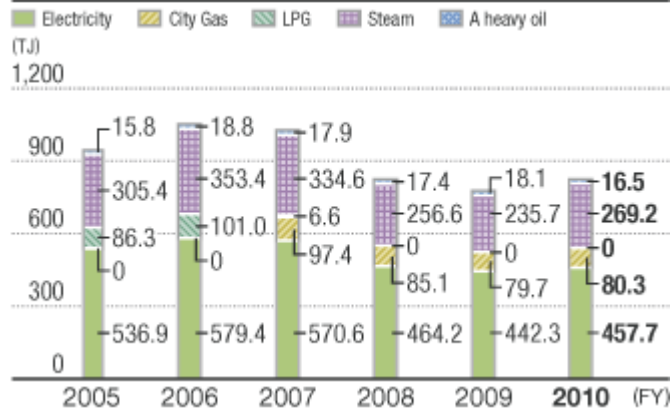
### ■ Traffic Safety Awareness



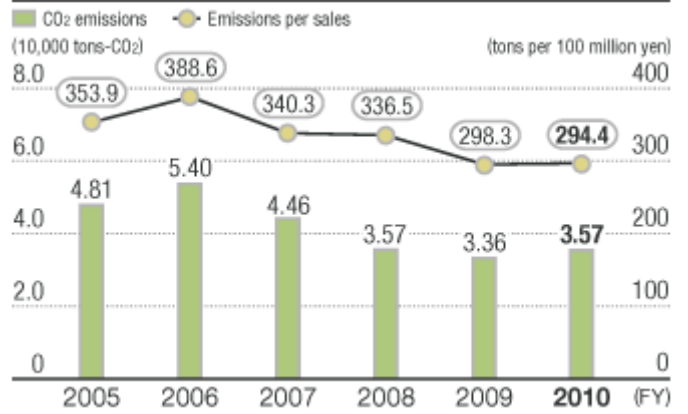
Members of the Kashima Plant's traffic safety board take turns standing on the street in front of the plant to raise awareness of traffic safety.

# Environmental Performance Data

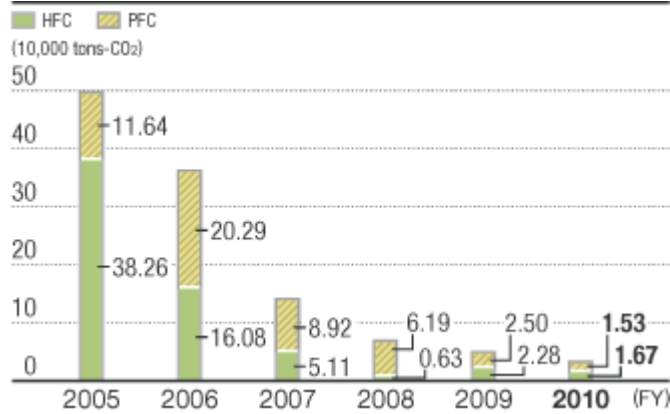
## Energy Consumption



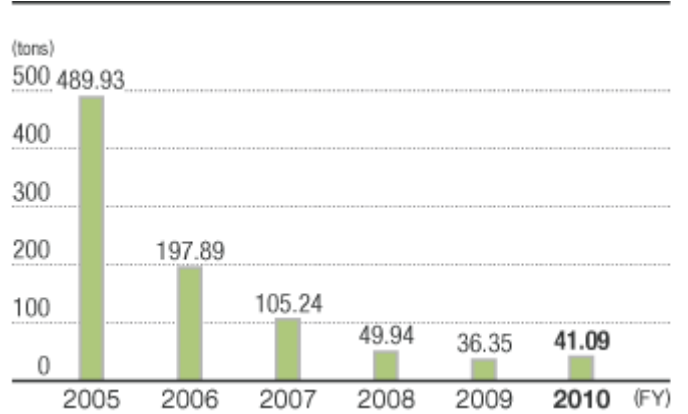
## Energy-Induced CO<sub>2</sub> Emissions



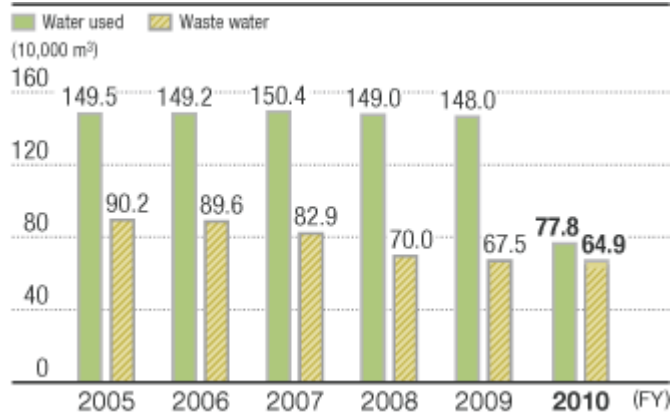
## Greenhouse Gas Emissions Other than CO<sub>2</sub>



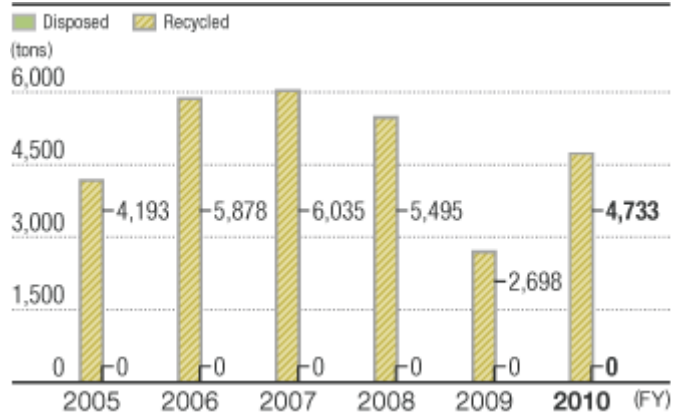
## Release of Substances Designated by PRTR Law



## Water Used/ Waste Water



## Amount Disposed of and Amount Recycled



■ Release and Transfer of Chemical Substances (PRTR)

Unit: kg

Substance name	Amount emitted			Amount transported	
	Air	Public waterways	Soil	Waste	Sewage
Chlorodifluoromethane (also called HCFC-22)	23,469	0	0	0	0
Dichloromethane (also called methylene chloride)	16,602	0	0	0	0
Chloroform	788	0	0	0	0.6
Hydrogen fluoride and other water-soluble salts	230	0	0	0	0
2-Chloro-1,1,1,2-tetrafluoroethane (also called HCFC-124)	0	0	0	0	0
total	41,089	0	0	0	1

■ Air Pollutant Measurements

	Unit	Facility name (Legally designated facility)	Regulation value	Actual average value
SOx	Nm <sup>3</sup> /h	N/A	—	—
NOx	ppm	KE boiler	100	—
Dust	g/Nm <sup>3</sup>	KE boiler	0.1	—

■ Water Pollutant Measurements

	Unit	Regulation value	Actual average value
Chemical oxygen demand (COD)	mg/l	50	9
Biological oxygen demand (BOD)	mg/l	50	8
Fluorine and its compounds	mg/l	15	5.6

■ Noise and Vibration Measurements

No measurements since not covered by legal restrictions.