

# 15. Chemicals Management and Promotion of Green Purchasing 1/3

As clearly declared in our Basic Environmental Policy, "Terumo sets voluntary targets and works to conserve the environment." Terumo makes continuous efforts to be an environmentally friendly company by taking various approaches to reduce our environmental impact. For example, we monitor and control chemical substances according to our own strict voluntary management targets and promote green purchasing.

## Introduction of stricter chemicals management

### Initiatives to reduce ethylene oxide emissions

Ethylene oxide is widely used to sterilize medical devices and equipment. We set voluntary concentration controls\* to track concentrations of ethylene oxide at vent outlets as well as emissions at other sites such as warehouses. We also manage emissions to ensure that the ethylene oxide concentrations measured along the boundaries of our facilities remain below the permitted concentration level. In fiscal 2008, we were able to reduce emissions of ethylene oxide despite our increased use of the chemical by installing an additional emissions treatment system. We will continue to utilize our refined verification methods to track the amount of ethylene oxide adsorbed to our products, which is one of the causes of trace levels of emissions, and other details.

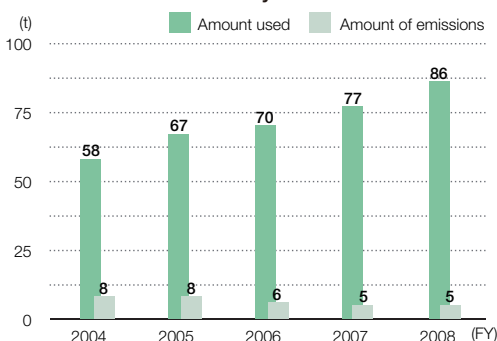
\* For voluntary concentration controls, see the *Environmental Risk Assessment of Chemical Substances* (second edition), Ministry of the Environment.

### Additional ethylene oxide emissions treatment facilities installed at Ashitaka Factory

In fiscal 2008, we installed an additional catalytic oxidation treatment system, which can detoxify even low-concentration emissions, at Ashitaka Factory, in response to an increase in the use of ethylene oxide. Using this system together with an existing system that has been in operation since fiscal 2006, we aim to further reduce emissions and improve the work environment in which the processes using the chemical is performed. At all factories where ethylene oxide sterilization is used, Terumo has introduced and been operating systems for the detoxification of ethylene oxide emissions. Catalytic oxidation treatment systems are in operation at Fujinomiya Factory and at our R&D facilities. We are also working on alternatives to ethylene oxide sterilization.

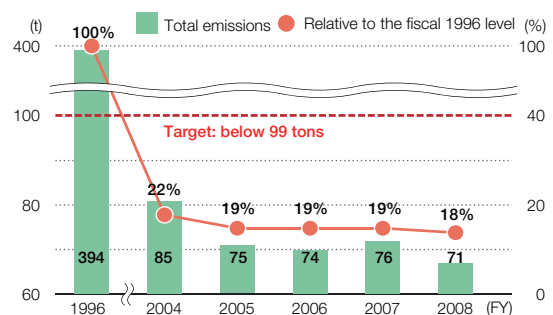


### Trends in use/emissions of ethylene oxide



### Target for Reduction of Chemical Emissions: Controlling dichloromethane emissions to below 99 tons

#### Trends in dichloromethane emissions



#### Substances subject to the PRTR\* and substances under voluntary management

Substance	Amount (t)	Factory				R&D	Total
		Fujinomiya Factory	Ashitaka Factory	Kofu Factory	R&D		
Ethylene oxide (EOG)	Used	15.5	50.5	19.5	0.0	85.5	
	Emitted	0.9	2.5	1.8	0.0	5.2	
	Transferred	0.0	0.0	0.0	0.0	0.0	
Dichloromethane	Used	0.0	4.5	152.2	0.0	156.7	
	Emitted	0.0	0.9	69.7	0.0	70.6	
	Transferred	0.0	3.6	0.0	0.0	3.6	
HCFC-141b	Used	31.7	0.0	14.1	0.0	45.8	
	Emitted	31.7	0.0	12.1	0.0	43.8	
	Transferred	0.0	0.0	0.0	0.0	0.0	
HCFC-225	Used	3.0	15.4	1.9	0.0	20.3	
	Emitted	3.0	14.3	0.6	0.0	17.9	
	Transferred	0.0	1.0	0.0	0.0	1.0	
Di (2-ethylhexyl) phthalate (DEHP)	Used	669.4	6.7	175.2	0.0	851.3	
	Emitted	0.0	0.0	0.0	0.0	0.0	
	Transferred	0.0	0.0	8.4	0.0	8.4	
Toluene	Used	0.0	0.0	3.1	5.0	8.1	
	Emitted	0.0	0.0	0.5	0.0	0.5	
	Transferred	0.0	0.0	2.6	2.4	5.0	
Hydrogen fluoride	Used	0.0	8.6	0.0	0.0	8.6	
	Emitted	0.0	1.3	0.0	0.0	1.3	
	Transferred	0.0	0.0	0.0	0.0	0.0	
Dichloroethane	Used	0.0	2.8	0.0	0.0	2.8	
	Emitted	0.0	2.5	0.0	0.0	2.5	
	Transferred	0.0	0.3	0.0	0.0	0.3	
Benzene	Used	0.0	0.0	15.5	0.0	15.5	
	Emitted	0.0	0.0	0.0	0.0	0.0	
	Transferred	0.0	0.0	0.0	0.0	0.0	
Tetrahydrofuran THF (under voluntary management)	Used	7.6	18.4	1.1	0.0	27.1	
	Emitted	5.8	13.0	0.9	0.0	19.7	
	Transferred	1.8	5.5	0.2	0.0	7.5	

\* PTPR: Pollutant Release and Transfer Register

- We phased out di (2-ethylhexyl) adipate (DEHA) and promoted the use of alternatives.
- Our effort to stop using HCFC-141b resulted in a slight increase in the amount of HCFC-225 used. HCFC-225 has a low ozone depletion potential.
- Dichloroethane has been added to the list in this fiscal year as the amount used increased and the substance was placed under PRTR.
- Benzene has been added to the list in this fiscal year as the substance is found in city-supplied gas, which we use as fuel.

## Aiming at appropriate PCB\* management

In accordance with the Law concerning Special Measures for Promotion of Proper Treatment of PCB Wastes and the Waste Management and Public Cleansing Law, we have removed all transformers, fluorescent light ballasts and other equipment containing PCBs. To ensure the prompt and appropriate disposal of these materials, we completed early registration with the Toyota office of the Japan Environmental Safety Corporation (JESCO).

An investigation conducted by the Japan Electrical Manufacturers' Association identified pieces of equipment that may potentially contain trace amounts of PCBs on the basis of the time of manufacture or other factors. Following this, we conducted our own investigation, categorizing and performing a complete analysis of every piece of equipment (including examining manufacturer warranties), with the exception of those that could not be analyzed due to their sealed nature. These will be examined when they reach the end of their life.

\* PCB: Polychlorinated biphenyl

### Inventory of equipment containing PCBs

Storage site	Fluorescent light ballasts	Capacitors	Reactors	Transformers
Fujinomiya Factory	459	23	0	0
Ashitaka Factory	419	17	2	3

### Heavy electrical equipment that may potentially contain trace amounts of PCBs

Time of manufacture	No. of pieces owned
Period B	8
Period C	221
Period D	152

B: From 1953 to 1972 (when equipment containing PCBs and PCB-free equipment was manufactured in parallel)  
 C: From 1973 to 1989 (when equipment containing PCBs and equipment containing recycled PCBs was manufactured in parallel)  
 D: From 1990 to 2005 (when PCB-free equipment was manufactured)

## Green Procurement

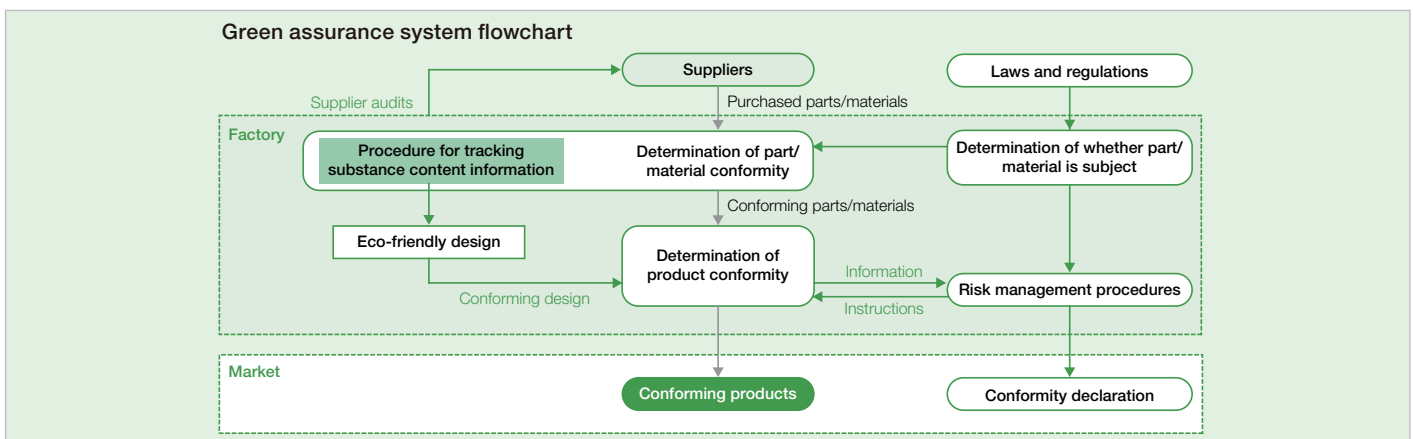
### Toward the establishment of a green conformity assurance system

European environmental regulations (RoHS/WEEE), as well as Chinese and Japanese laws, restrict the use of hazardous substances in electrical and electronic equipment (or require that such equipment be labeled). Meanwhile, creating a conformity assurance system to bring medical devices, which are not yet targeted by the EU's RoHS Directive, into conformity with these regulations is a vital task in the achievement of eco-friendly operation.

Our basic policy on conformity assurance is to prevent harmful substances from entering the factory and also prevent them from exiting. This concept is not vastly different from the traditional concept of quality assurance for medical devices. It was necessary, however, to add new rules to the management procedures due to the need to handle management elements not conventionally present. We thus added the following management steps, the main elements of which had already been stipulated.

- ① **Procedure for determining which items are subject to the assurance system**
- ② **Procedure for determining conformity of parts and materials purchased and products shipped**  
(Created determination flow and determination standards for purchased parts/materials. Partially implemented)
- ③ **Procedure for tracking information about substances contained in purchased parts/materials**  
(Created instructions for investigating substance composition and began periodic investigations in FY 2007)
- ④ **Procedure for eco-friendly product design**  
(Provide results of substance composition investigation via database and provide conformity training)
- ⑤ **Procedure for risk management**  
(Risk analysis/improvement instructions/determination of whether self-declarations are allowed)

In the future, we will integrate each of these procedures in turn into our quality management system to construct an overall conformity assurance system.



## Promotion of green purchasing

We promote green purchasing through our established guidelines for selecting office and stationery supplies and other equipment used in production processes and workplaces. This is an ongoing activity that complements our other approaches to environmental conservation.

### Results of green purchasing for fiscal 2008

\*thousands of items; \*\*thousands of yen

Category	Data	Overall result	Eco Mark products		Products compliant with the Law on Promoting Green Purchasing		Green Mark products	
Head office/ sales offices (total)	Number of items purchased*	12	5	45%	7	56%	3	22%
	Total payment**	7,657	6,616	86%	7,146	93%	3,046	40%
Factories (total)	Number of items purchased	39	19	49%	23	59%	5	13%
	Total payment	18,217	9,341	51%	10,406	57%	3,313	18%

Note: Since the revelation of falsifications regarding the content of waste paper in recycled paper, correction of the criteria for green purchasing has been considered. The above results, however, were calculated according to the current contents indicated by Eco Marks and Green Marks.

## Low emission vehicles

As of the end of March 2009, Terumo owned 738 vehicles for company use. Of these, 722, or 98% of the vehicles in our fleet, are 3-star or higher low emission vehicles (LEVs).

### Low emission vehicle fleet

Vehicle type		No. of vehicles
☆☆☆☆	75% below FY 2005 exhaust gas standard	412
☆☆☆	50% below FY 2005 exhaust gas standard	310
☆☆	50% below FY 2000 exhaust gas standard	1
☆	25% below FY 2000 exhaust gas standard	8
	None	7
	Total	738



Low emission vehicle