



Chemical Emission Reduction

Achieving assured reductions in chemical emissions through technological development by Group companies and a management system making effective use of IT.

Influenced by the worldwide recession in the IT industry, we revised our business plans in fiscal 2001, reducing its chemical use and emissions accordingly. Even under these conditions, the Group companies continued to pursue positive efforts to reduce chemical emissions and achieved their targets for fiscal 2001.

We have deployed a Fujitsu chemicals management system for integrated management by intranet of chemical handling methods, information on relevant law and the chemical usage and emissions situations of the various plants, departments and production lines.

We have also implemented a stricter management system based on our own standards to handle chemical pollutants in accordance with Japan's new PRTR (Pollutant Release & Transfer Register) Law.*1

Fujitsu Group : 6 Fujitsu sites / plants, 12 domestic affiliates (manufacturing) and 4 overseas affiliates (manufacturing)

Chemical Emission Reductions Achieved

Fiscal 2001 Results

Under the Fujitsu Environmental Action Protection Program (Stage III), Fujitsu Japan and the Fujitsu Group share the goal of cutting emissions of key chemicals by 30% by the end of fiscal 2003 relative to fiscal 1998 results. Group chemical emissions*2 totaled 57.9 tons in fiscal 2001, a reduction of 174.3 tons (74%) from the fiscal 1998 total. Fujitsu's chemical emissions totaled 8.6 tons in fiscal 2001, a reduction of 57.9% from the fiscal 1998 total. Our goals has have thus been achieved.

*2 Methods of calculating chemical emissions reduction: Values are calculated by multiplying total volumes of effluent (compounds of nickel or manganese and other chemicals) or atmospheric emissions (xylene, toluene and other chemicals) by the concentrations of the relevant substances measured at the points of discharge from the site. Values for xylene, toluene and other chemicals may also be based on the amounts of chemicals purchased and used.

Fiscal 2001 Analysis

The usage and emissions of chemicals decreased with respect to targets in line with a review of the Fujitsu Group's business plans. In addition, positive efforts by the various Group companies to promote the exchange of technologies and know-how with respect to emissions reduction enabled six Fujitsu sites and 12 domestic affiliates, with the exception of four overseas sites, to achieve their targets for fiscal 2001. We are continuing to work to achieve our reduction goals through focused improvement efforts.

Targeted Chemical Substances (17)*3

- Xylene
- Toluene
- Nickel and related compounds
- Copper compounds
- Formaldehyde
- Fluorine compounds
- Hydrazine derivatives
- Phenols
- 3,3-dichloro-4,4-diaminodiphenylmethane
- Manganese compounds
- Lead compounds
- Bromine compounds
- Cadmium compounds
- Chromium compounds
- Arsenic compounds
- Cyanide compounds
- Phosphine

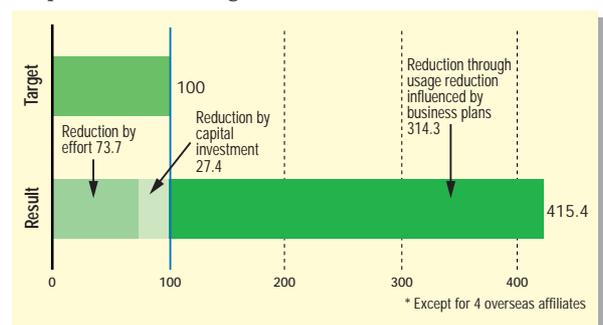
*3 The figures exclude emissions of substances in cases where further reduction would be technically difficult (such as fluorine compounds in wastewater at Japanese sites, for example, where appropriate reduction measures are already in place).

Transitions in Fujitsu Group

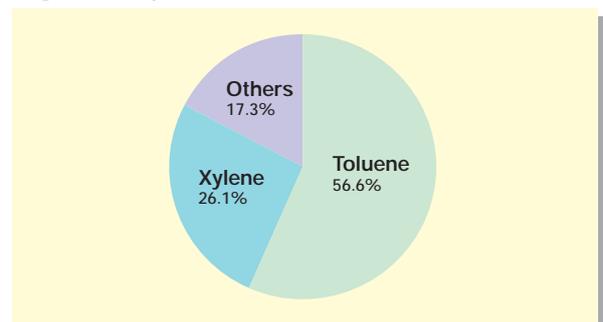
(Unit: tons)



Comparison of Results (Targeted reduction volume for fiscal 2001 : 100)



Proportion of Key Chemical Emissions in Fiscal 2001



Active measures for chemical emissions reduction through capital investment and efforts

Principal Measures Undertaken

- Reduction of 1 ton of toluene and xylene emissions by cutting paint use through replacement of coated materials with stainless steel materials at the Fujitsu Oyama Plant (reduction through efforts)
- Reduction of 0.8 ton of xylene emissions by proper management of the exhaust recirculation system (managing the ability of xylene absorption materials, etc.) at the Fujitsu Iwate Plant (reduction through efforts)
- Reduction of 0.5 ton of toluene emissions by cutting use of developer chemicals that include toluene through a change in PCB development processing by Shinko Electric Industries (reduction through efforts)



Use of stainless steel materials to replace coated parts at the Fujitsu Oyama Plant

Measures for PRTR Law Compliance

Although the PRTR Law requires reporting of data on any of 354 Class I designated chemicals for which annual usage/processing exceeds 5 tons, we are compiling survey data and issuing reports regarding these substances based on a 0.1-ton minimum as well as submitting the required reports to public administration offices. As concerns chemical emissions with effects on health and the plant environment, meanwhile, we are conducting risk communication to deepen

understanding of toxicity and the accompanying dangers, and introducing prevention measures. Chemical use by the Fujitsu Group in fiscal 2001 was approximately 6039.6 tons. Chemical use by Fujitsu, meanwhile, was approximately 1285.6 tons, an increase of 68% compared with fiscal 2000. This rise was due to a reduction in the target value for examination from over 1 ton to over 0.1 ton.

Survey Results for Chemicals Covered by the PRTR Law in Fiscal 2001

Fujitsu Group

(Unit: kg)

Name of Class I designated chemicals*	Number of Class I designated chemicals*	Use/processing volume	Emission volume*				Transferred volume*		Volume recycled/removed/consumed (kg)
			Emission into air	Emission into public area water	Emission into soil at site (except landfill)	Landfill at site	Transfer into sewerage	Transfer off-site (except into sewerage)	
Manganese and its compounds	311	3006264.6	11.7	56.3	0.0	0.0	0.0	77159.8	2929036.9
Copper aqueous salt (except complex salt)	207	1047642.9	14.7	1225.9	0.0	0.0	14.7	131033.9	915353.8
2-aminoethanol	16	417961.3	474.0	1256.7	0.0	0.0	0.0	293543.3	122687.3
Xylene	63	317961.8	13456.4	0.0	0.0	0.0	0.0	40830.4	263675.1
Chlorodifluoromethane (HCFC-22)	85	230000.0	2300.0	0.0	0.0	0.0	0.0	227.7	227472.3

* Refers to items required for reporting by the PRTR Law

* Totals differ slightly due to rounding off.

* These survey results are for 11 Fujitsu sites (plants and offices) and 26 domestic and 4 overseas affiliates (manufacturing).

* Please refer to the Data Appendix (pages 47-48) for results for all chemicals handled in volumes exceeding 0.1 ton by Fujitsu and the Fujitsu Group (manufacturing).

Chemical Management System (eco-HCMS for Internet)

From fiscal 2000, Fujitsu has deployed a chemical management system to collate MSDS data (constituents, handling methods, relevant laws, etc.), of about 4,000 substances to control the chemical usage status of each manufacturing plant and line and to maintain a chemical balance totally from purchasing and use to disposal. This system also serves as a support tool for chemical balance reporting in accordance with the PRTR Law. The system can be accessed from every plant through terminals connected to the internal intranet. Similar measures are currently being implemented throughout the Fujitsu Group.



eco-HCMS Internet chemical management system

Based on our fiscal 2001 results and analysis of those results, we will reduce chemical emissions by implementing the following countermeasures, recognizing the fact that trends in business activities (product manufacturing) significantly influence increases and decreases in chemical use.

- Introduction of green processes for manufacturing products with the least possible use of chemicals from the development/design stage onward.
- Horizontal expansion of the various companies' technologies & know-how whose effectiveness for chemical emissions reduction is recognized Group-wide.