

Chemical Management

To prevent environmental pollution, we strictly control the chemical substances we use. We independently identify chemicals that we ban from use in our products and work to eliminate them and find alternatives, and also work to determine which substances are present in the products we purchase from suppliers.

Stance on Chemical Management

Chemical substances such as plastics, coatings, lubricants, gases and chemicals are an essential part of TEL production activities. They have many valuable properties, but the other side of the coin is that some of them also have hazardous properties. If they are not properly managed, the potential exists for accidents or pollution of the environment.

TEL starts by eliminating the use of hazardous substances to the greatest extent possible. We independently determine the chemicals to be banned from green purchasing and product design, and then work to find safe substitutes and to reduce the amounts used. In addition, we conduct voluntary controls of hazardous substances that are stricter than government regulations, in an effort to minimize chemical risk.

Complying with the PRTR* Law

Japan's PRTR Law was promulgated in March 2000, and we began full-scale PRTR reporting during FY 2003, after a preparatory phase involving the creation of guidelines for the management of chemical substances, the provision of MSDS information, and the development of methodologies for calculating the amounts of releases and for making official reports to the government.

Under the PRTR Law, reporting is mandatory for chemicals that are handled in amounts of five tons or more per year at each facility. TEL has been conducting stricter controls than those legally required, by continuing to control and monitor any substances stipulated by the law that we use in amounts of 0.1 tons or more per year. The FY 2003 totals for substances targeted by the PRTR Law are shown in the table below. We handled no substances in amounts exceeding five tons (in either of the first two years) that would require reporting.

*PRTR (Pollutant Release and Transfer Registers): A framework for controlling chemical substances that may be hazardous to ecosystems and human health. It involves determining, compiling, and reporting on the amounts of chemicals used, released into the environment, and contained in waste transferred off-site.

Class 1 Substances Controlled under the PRTR Law (Units: tons)

Official number	Chemical name	Amount handled
1	Water soluble zinc compounds	0.05
16	2-amino ethanol	0.43
43	Ethylene glycol	4.00
172	N,N-dimethylformamide	0.45
207	Water soluble copper salts (except complex salts)	0.12
260	Pyrocatechol	0.03
283	Hydrogen fluoride and its water-soluble salts	3.69
311	Manganese and its compounds	0.90
Total		9.69

Concrite of the Chemicals Contained in Products

TEL works to address international and domestic laws, regulations and trends relating to the management of chemical substances and is striving to eliminate the general use of hazardous substances.

We have investigated the chemical substances contained in the components and materials that make up our products, and based on our findings, have listed the substances for which we have prohibited in our products. These findings are also reflected in our green procurement. Carrying out these activities rigorously will enable us to offer products that do not use substances that could damage or harm human health or the environment.

Prohibited Substances in Construction Materials of TEL Products

Substance group name	
Asbestos	Hydrogen fluoride and its water-soluble salts
Cadmium and its compounds	Beryllium and its compounds
Hexavalent chromium compounds	PCBs (polychlorinated biphenyls)
Cyanide compounds	Ozone-depleting substances
Mercury and its compounds	Halogenated fire retardants
Organic tin compounds	Specified brominated fire retardants (PBB, PBDE, etc.)
Selenium and its compounds	Polychlorinated naphthalene (chlorine number 3 and higher)
Dioxins	Organochlorine compounds
Arsenic and its compounds	PFOS* and its homologues

*Perfluorooctane sulfonate: An intermediate substance from which target chemicals are synthesized.

TOPICS

Management of Liquid Chemicals by Labeling

In the evaluation cleanrooms at the Kumamoto and Koshi plants, we are managing the use of liquid chemicals by affixing labels with identification data onto the containers of chemicals used in product evaluation and testing.

The information on labels is entered into a database, enabling us to easily track inventories and status of use.

In accordance with handling methods specified by MSDS standards, the chemicals are stored separately at either cool or room temperatures as appropriate.



Label attached to chemical container

Efforts to Reduce Non-CO₂ Greenhouse Gas Emissions

The Kyoto Protocol was adopted at the Third Session of the Conference of the Parties to the UN Framework Convention on Climate Change (COP3), held in Kyoto in December 1997. It set specific numerical targets for the reduction of greenhouse gas emissions from developed countries, and methods for achieving these. Japan ratified the Protocol in June 2002. TEL is working hard to reduce greenhouse gas emissions. Besides carbon dioxide emissions from energy use, TEL is using PFCs and SF₆ (greenhouse gases) in cleaning and dry etching processes, among others. The total of these emissions is 10,000 tons per year (CO₂ equivalent). TEL will continue working to control and reduce the emissions per unit of business activity as well as to reduce total emissions.

Greenhouse Gas Emissions from Sites in Japan (Units: t-CO₂)

HFCs	PFCs	SF ₆	Other	Total
1,468	1,856	6,740	18	10,082

Material Safety Data Sheets*

We are sharing MSDS safety information on all chemicals newly introduced at any plant by using a database hosted on our intranet. Because information searches can be conducted from all plants, any user can determine the toxicity and hazard level for each individual chemical, and make a decision on whether or not to use it.

In addition, MSDS documentation is placed at all locations in TEL where chemicals are used, and steps are taken to prepare for emergencies such as leaks and explosions.

*Material Safety Data Sheets (MSDS): Documents with information that is used to accurately determine the toxicity and proper handling of chemical substances.



Screenshot of an intranet search

PCB Storage

Japan's Law Concerning Special Measures against PCB Waste entered into force in July 2001. In accordance with this law, we are rigorously controlling waste that contains PCBs and submitting reports each year to the local prefectural governors about the status of storage and disposal of PCB waste. The status of storage at TEL is shown below.

Storage of Equipment Containing PCBs (Sites in Japan)

Transformers	2 sets
Capacitors	4 sets

TOPICS

Independent Controls at Each Site: Yamanashi Region

In the Yamanashi region (Fujii and Hosaka plants), highly hazardous gases such as chlorine and special high pressure gases like monosilane are used in the process development. Strict controls are in place to prevent even that the slightest leak, but in the unlikely event that a problem occurs, a centrally-monitored system can detect even minute leaks and automatically interrupt the supply of the gas.

In addition, these plants have created their own lists of substances for which purchasing is prohibited. The list includes nine organochlorine solvents and seven heavy metals, for a total of 16 items. If for some reason it is absolutely necessary to use one of these substances, the plant rules require a two-step review before approval. The plants have established voluntary wastewater standards that are stricter than those of the local prefecture, and are working to keep transfers of hazardous substances into the environment to the absolute minimum.



Central monitoring room

Manager's Comment

In the Yamanashi region we are using about 1,000 types of chemical substances and products, and in terms of both number and amounts, this is more than any other company in TEL. We take extra precautions for safety and the environment with a system that requires review and approval before introducing or using a new substance. Using our own numbering system, we have created an easy to use system that relies on a registry of chemical substances and products to prevent mistaken use. For very common chemicals like sulfuric acid and hydrochloric acid, we have a pool system that eliminates waste from purchasing and use.

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