



Responsible Care Activities Report 2002



2002 INDEX

Responsible Care

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Goals, Results, and Evaluation of Tosoh's Responsible Care

 : Attained  : Nearly attained  : Not attained

Medium-to-Long-Term Goals	Goals for fiscal 2001			Goals for fiscal 2002
	Goals	Results	Evaluation	Goals
Environment	Comply with regulations	Do not violate laws or agreements.	No laws or agreements were violated.	 Do not violate laws or agreements.
	Reduce emissions of substances subject to the Pollutant Release and Transfer Register (PRTR) Law. Reduce total PRTR substance emissions 75% from the fiscal 1995 level by fiscal 2006.	Study and implement measures to reduce emissions of substances subject to the PRTR Law.	Emissions of substances subject to the PRTR Law were reduced approximately 57% from the fiscal 2000 level in fiscal 2001 (approximately 64% of the fiscal 1995 level).	 Reduce emissions to 70% of the 1990 level by the end of fiscal 2005.
	Reduce final waste disposal. Reduce final waste disposal 80% from the fiscal 1990 level by fiscal 2010.	Make a five-year plan to reduce final waste disposal.	Each office sets its own reduction target for final waste disposal. Emissions in fiscal 2001 were reduced 64% from the fiscal 1990 level.	 Reduce emissions to 70% of the 1990 level by the end of fiscal 2005.
	Prevent global warming. Reduce per unit energy consumption to 90% or less of the fiscal 1990 level by fiscal 2010.	Prevent global warming. Reduce per unit energy consumption to 90% or less of the fiscal 1990 level by fiscal 2010.	Per unit energy consumption in fiscal 2001 was reduced to 95% of the fiscal 1990 level.	 Prevent global warming. Reduce per unit energy consumption to 90% or less of the fiscal 1990 level by fiscal 2010.
	Maintain ISO certification.	Help Group companies acquire ISO 14001 certification.	Tosoh helped four Group companies acquire ISO 14001 certification.	 Help group companies acquire ISO 14001 certification.
Safety	Prevent accidents, industrial accidents, and injuries resulting in death.	Create an environment free from accidents, industrial accidents, and injuries. No accidents No industrial accidents or injuries resulting in death Reduce accidents that both result in a suspension of work and those that do not to below the previous year's level (7 accidents). Establish concrete goals to create an accident-free environment. Collect and analyze actual cases of nonstandard operations as well as accidents in plants.	An environment free from accidents and industrial accidents, and injuries was created in fiscal 2001. No accidents No industrial accidents or injuries resulting in death Four cases of accidents that either resulted in a suspension of work or had no effect on work The number of these types of accidents decreased to approximately half that of the previous fiscal year. Information on accidents and industrial accidents was collected and analyzed, and the findings were reflected in the safety assurance measures that were established.	 Create an environment free from accidents, industrial accidents, and injuries. No accidents No industrial accidents or injuries resulting in death Reduce accidents that both result in a suspension of work and those that do not to below the previous year's level. Establish concrete goals to create an accident-free environment. Collect and analyze actual cases of nonstandard operations as well as accidents in plants.
	Promote voluntary activities to ensure safety.	Increase the number of plants that obtain voluntary safety approval.	Tosoh's plants are in the process of obtaining voluntary safety approval.	 Increase the number of plants that obtain voluntary safety approval.
Quality	Decrease the number of quality-related complaints to zero.	Further reduce the number of complaints.	Contract distributors were audited.	 Reduce the number of complaints about Group companies.
	Set up measures to prevent product liability (PL)-related problems.	Improve product safety validation.	Two product safety evaluation meetings were held at Head Office.	 Continue Product Safety Committee meetings and counseling on product quality.
Safety of chemicals	Promote high-production volume (HPV) and measures to evaluate scientific risk.	Promote HPV: Start evaluating manganese dioxide and iron chloride.	Complete evaluations of vinyl chloride monomer (VCM), ethylenediamines (EDAs), and triethylenephosphoramides (TEPAs).	 Promote HPV and evaluate the risk of specified chemical substances.
	Prepare material safety data sheets (MSDS) and establish an integrated control system.	Revise MSDS and promote electronic applications for distribution and control.	An MSDS electronic approval system was developed.	 Apply the MSDS electronic approval system, improve regulatory systems, and ensure detailed safety information.

Takashi Tsuchiya

Takashi Tsuchiya, President & COO



Becoming a Unique One-Stop Chemical Supplier

From the very beginning, Tosoh Corporation stood out as an innovative company that promotes the development of its chemical technology and works toward establishing itself as a leader in the field of comprehensive chemistry.

With the many global concerns that we face, such as environmental protection, chemistry is expected to play a more important and wider role. For this reason, Tosoh is working hard to enhance its corporate base and, for the sake of the future, ensure that its corporate philosophy-"contribute to a better society through innovations in chemistry"-is followed to the letter. We hope that we will be able to continue serving you well into the future.

Madoka Tashiro

Madoka Tashiro, Chairman & CEO

Tosoh Corporation Corporate Profile

Name of Company	Tosoh Corporation
Date of Incorporation	February 11, 1935
Head Office	3-8-2 Shiba, Minato-ku, Tokyo 105-8623, Japan
Registered Head Office	Kaisei-cho 4560, Shunan City, Yamaguchi 746-8501 Japan
Paid-in Capital	¥40.6 billion (as of the end of March 2002)
Sales	¥427.4 billion (consolidated) ¥282.9 billion (nonconsolidated) (For the fiscal year ended March 2002)
Major Offices	Nanyo Complex, Yokkaichi Complex, Toyama Plant, Tokyo Research Center, Nanyo Research Laboratory, Nanyo Technology Center, Yokkaichi Research Laboratory
Number of Employees	9,404 (consolidated), 2,493 (nonconsolidated) (as of the end of March 2002)

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Responsible Care

Tosoh Corporation: Corporate Profile

1-1. Tosoh's Products

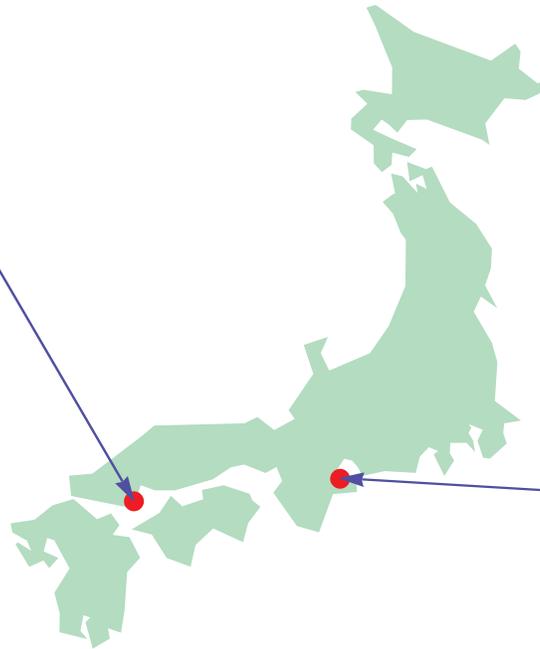
Tosoh's products play a big part in daily life and environmental conservation in many ways. In addition, Tosoh Group companies are engaged in a variety of environmental conservation projects. Some of these activities are described in the following section.



Nanyo Complex

Main Products

- Caustic soda, chlorides
- Vinyl chloride monomer (VCM), vinyl chloride paste
- Cement
- Polyethylene
- Polychloroprene rubber
- Specialty products, ethylene amines, zirconia, etc.



Yokkaichi Complex

Main Products

- Ethylene, propylene, C4 fraction, C5 fraction, benzene, toluene, and xylene (BTX)
- Cumene
- Polyethylene
- PPS resin, petroleum resin
- VCM, vinyl chloride resin (Taiyo Vinyl Corporation)
- Caustic soda derivatives and chlorine



Products and Technology That Play a Big Part in Daily Life and Environmental Conservation

Chlorine	Vinyl chloride resin	Ferric chloride	Zeolites
Chlorine, used to disinfect or sterilize various materials, such as tap water, is indispensable in promoting general and public health.	Vinyl chloride is used in a variety of products, from public water supply/sewage pipes to building materials, plastic agricultural greenhouses, and medical devices. The amount of energy consumed and CO2 emitted during its production is significantly limited, which helps prevent global warming.	This well-known coagulant for wastewater treatment is used in various fields in an effort to protect the environment.	We are currently in the process of developing zeolites, which have the potential of keeping the environment clean by effectively promoting the absorption of hydrocarbons and other substances emitted by automobiles. Zeolites are expected to play a wide range of roles, such as in the collection of volatile organic compounds (VOCs) emitted by factories and in the catalytic reactions in automobiles.
Hydrocarbon cleaning agent (HC series) The HC series is employed for degreasing and cleansing the components of metal-machining plants in the fields of precision equipment and electronics. It is a non-water cleaner that uses neither chlorofluorocarbon gas nor ethane, thus making it environment-friendly.	Heavy metal treatment agents (TS-500 and TX10) Waste gas, often containing harmful metals, is generated when refuse is burned in urban incinerators and ash is discharged into the atmosphere. TS-500 acts as an agent to eliminate harmful metals in gas, while TX-10 is used to eliminate heavy metals contained in wastewater.	Diabetes diagnostic system Faster results, higher sensitivity, and better accuracy are the key concepts behind the automatic glycohemoglobin analyzer. This device is widely used in the screening for and treatment of diabetes and other physical examinations.	Immunodiagnostic device and reagent A unique clinical testing system consisting of an automatic immunologic measurement device and an in vitro diagnostic drug that can be used in screening for various types of tumors, endocrine diseases, and allergic diseases, contributes to the promotion of public health.

Environmental Restoration Activities

Tosoh plays an active role in promoting environmental conservation and restoration.

Advanced wastewater treatment facility

Organo Corporation

Organo's wastewater-treating technologies are utilized to transform wastewater into freshwater that can be returned to local ecosystems without harming the environment. The treated water contributes to the conservation and regeneration of a safe and comfortable environment. Organo's technologies play an important role in treating wastewater in both urban and rural areas, and at fisheries. For example, they are used to eliminate nitrogen and phosphorous from streams, and to remove other potential contaminants from streams, lakes, and oceans.



Groundwater and soil purification

Eco-Techno Corporation

As the public has become increasingly aware of the importance of protecting our global environment, greater attention has been placed on efforts to regenerate polluted groundwater and soil. Backed by Tosoh's and Organo's advanced technologies, Eco-Techno Corporation is developing a new environment-regenerating business and offers integrated service from basic research to the purification and monitoring of environmental conditions. Eco-Techno Corporation was established as a joint venture between Tosoh and Organo in April, 1996.



Keeping water in our environment clean

Kasumi Kyodo Jigyo

Kasumi Kyodo Jigyo Co., Ltd. manages concentrated wastewater treatment

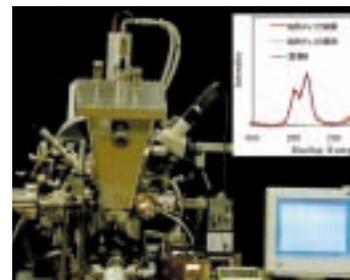
facilities for treating water discharged from companies in neighboring industrial complexes. The company employs a stepped aeration-type sludge-activated process and other technologies.



Environmental analysis

Tosoh Analysis & Research Center

The Tosoh Analysis & Research Center Co., Ltd. is involved with water and air quality analyses in environmental monitoring operations.



Ultrawide liner sheet

Tosoh Nikkemi Corporation

Compared with the more commonly used liner sheet, this ultrawide liner sheet has no seams and can be positioned easily. Because it can significantly reduce the risk of hazardous substances leaking, the ultrawide liner sheet is used in many kinds of facilities, such as general and industrial waste landfill treatment facilities.



Energy-Saving Products

Japan's first silica plant for fuel-efficient tires begins operations

Nippon Silica Industrial

Nippon Silica Industrial, a subsidiary of Tosoh Corporation, began to produce silica (white carbon) for fuel-efficient tires in April, 2001. The benefits of using silica include an improvement in the rolling resistance of the tire, which can result in a 5-6% reduction in fuel consumption and increased driving stability on wet surfaces.



Material Recycling Products

Promoting the Recycling of Plastics

Artificial plastic wood

Tosoh Nikkemi Corporation

Tosoh Nikkemi Corporation recycles waste plastic into a material similar to artificial plastic wood. The material resembles natural wood and is widely used for improving the appearance of parks, lakes, and ponds.



Flooring materials

Lonseal Corporation

This subsidiary company converts used vinyl sheeting collected from agricultural farms and crushed construction materials into flooring. This is an outstanding example of effective and economical recycling.



1-2. Tosoh's Corporate History and Promotion of Environmental Projects

Tosoh's Corporate History

Tekkosha

1925 Tekkosha Co., Ltd., founded
 1928 Yamagata Plant opened
 1938 Sakata Plant opened
 1953 Toyama Plant opened
 1965 Hyuga Plant opened
 1968 Ishinomaki Plant opened
 1970 Yokkaichi Plant opened
 1975 Tekkosha Co., Ltd., merged with Toyo Soda Manufacturing Co., Ltd.

Tosoh

1935 Toyo Soda Manufacturing Co., Ltd., incorporated
 1936 Nanyo Complex opened
 Production of soda ash started
 1942 Production of bromine started
 1943 Production of caustic soda started
 1953 Production of cement started
 1962 Production of phosphoric acid started
 1966 Production of VCM started
 Production of polyethylene started
 1971 Yokkaichi Complex opened
 Production of polychloroprene rubber started
 1981 Production of zeolites started
 Production of vinyl chloride paste started
 1983 Tohoku Tosoh Chemical Co., Ltd., established
 Production of zirconia powder started
 1987 Company name changed to Tosoh Corporation
 1994 Tosoh Speciality Materials Corp. established
 1995 Tosoh Hyuga Corp. established
 1996 Taiyo Vinyl Corporation established
 1998 Tosoh Plant Services Corp. established
 1999 Tosoh Analysis & Research Center Co., Ltd., established
 2000 Tosoh General Services Co. Ltd. and Tosoh Information Systems Co., Ltd., established
 2001 Tosoh Zeolum Inc. and Tosoh AIA Inc. established

Shin-Daikyowa

1968 Shin-Daikyowa Co., Ltd., established
 1972
 1973 { Production of ethylene, propylene, BTX, styrene monomer, polyethylene, and cumene started }
 1990 Tosoh/Shin-Daikyowa merged

Overseas Activities

1964 New York office (U.S.A.) opened
 1973 Tosoh Hellas A.I.C. (Greece) established
 1975 P.T. Standard Toyo Polymer (Indonesia) established
 1976 Delamine B.V. (Netherlands) established
 1985 Holland Sweetener Company V.O.F. (Netherlands) established
 1988 Tosoh SMD, Inc., (U.S.A.) acquired
 1989 TOSOH America, Inc., (U.S.A.) established
 1992 Equity interest in General Chemical (Soda Ash) Partners (GCSAP) (U.S.A.)
 1994 Philippine Resins Industries, Inc., (PRII) (Philippines) established
 1996 P.T. Satomo Indovyl Polymer (Indonesia) established
 1997 TOSOH Fine Chemicals Pte., Ltd., (Singapore) established
 1998 Tosoh Polyvin Corporation (Philippines) established
 2000 Tosoh SET, Inc., (U.S.A.) acquired
 2000 Equity investment in Mabuhay Vinyl Corporation (Philippines)
 2001 TOSOH Quartz Inc. (U.S.A.) acquired

Promotion of Environmental Projects

1987 High-pressure gas voluntary safety approval obtained by Nanyo and Yokkaichi Complexes
 1990 Environmental Committee established
 1991 Operation of chlorine recycling system (waste oil incineration facility) initiated
 1992 Basic Principles of Environment and Practical Guidelines for Environmental Conservation and Protection established
 1993 ISO 9001/2 certifications acquired by Nanyo Complex
 1994 ISO 9001/2 certifications acquired by Tokyo Research Center
 1995 Japan Responsible Care Council (JRCC) established based on a proposal put forth by Tosoh Corporation
 Activities as a member of the council supported
 ISO 9001/2 certifications acquired by Yokkaichi Complex
 1996 Operation of bromine recycling system (waste oil incineration facility) initiated
 1998 ISO 14001 certification acquired by Nanyo Complex
 1999 Basic Principles of Environment, Safety, and Health and Guidelines on Implementation revised
 High-pressure gas voluntary safety approval renewed by Nanyo and Yokkaichi Complexes
 ISO 14001 certification acquired by Yokkaichi Complex (All Tosoh manufacturing complexes and other facilities certified.)
 Operation of a refuse-derived fuel production facility (Phoenix) in Shinnanyo City, Yamaguchi Prefecture
 2002 Independent validation by JRCC introduced Responsible Care Validation Center
 ISO 13485 certification acquired by the Scientific Instruments Division, Tosoh, and Tosoh Group companies.

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Responsible Care

Tosoh's Basic Principles of Environment, Safety, and Health and Guidelines on Implementation

Basic Principles of Environment, Safety, and Health and Guidelines on Implementation

Basic Principles of Environment, Safety, and Health

Tosoh recognizes the importance of protecting the environment and assuring safety and health in all aspects of its business operations. Through constant innovations in chemistry, Tosoh strives to contribute to a better society by providing products and services that meet the customer's needs.

Guidelines on Implementation

1. Fundamental Principles

- 1) Observe rules and regulations and accept self-responsibility when promoting projects.
- 2) Set goals, prepare action plans, and promote cooperation when implementing projects.
- 3) Set up an audit system in which the results are used in subsequent action plans.

2. Environmental Conservation Projects

- 1) Make the most of limited resources by promoting energy-saving and resource-saving projects.
- 2) Reduce the amount of discharge and waste by improving the production process and operation control.

3. Safety Assurance Projects

- 1) Monitor operations to prevent accidents and industrial accidents.
- 2) Conduct disaster prevention training to maintain and control systems that can react immediately to emergencies.
- 3) Analyze past accidents and industrial accidents to prevent future ones.

4. Product-related Environmental Conservation and Safety Assurance Projects

- 1) Design products and develop production processes that take the environment, safety, and health into consideration.
- 2) Use the results of prior evaluations in the development of new products and processes.
- 3) Adopt a strict quality control system to assure the safety of products.

5. Improvements in Communication

- 1) Provide information on the safe handling of products and chemicals.
- 2) Release information on corporate activities to increase social responsibility.

Creation : February 11, 1992 Basic Principles of the Environment

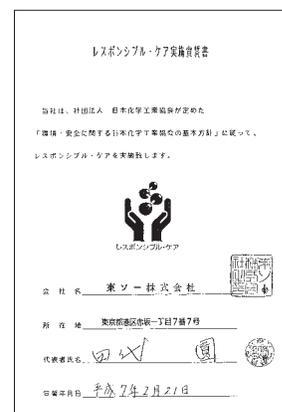
April 1, 1992 Practical Guidelines for Environmental Conservation and Safety Assurance

Revision : April 1, 1999 Basic Principles of Environment, Safety, and Health and Guidelines on Implementation



What Is Responsible Care ?

Responsible Care is the voluntary monitoring of a product over its entire life cycle, from development and manufacturing to use and final disposal. It is carried out for the purpose of environmental conservation and safety assurance. Tosoh was a founding member of the Japan Responsible Care Council in 1995 and has since promoted this activity.

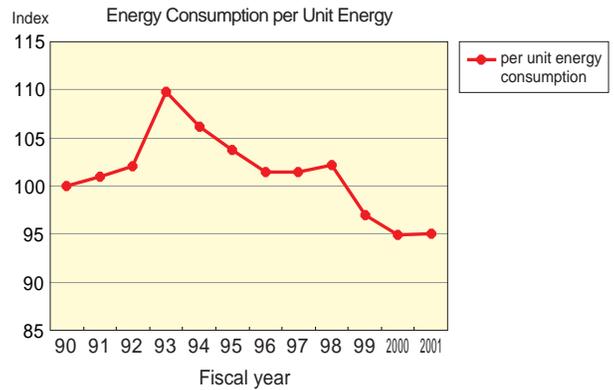


Environmental Conservation Measures

3-1. Measures to Prevent Global Warming

As a part of Nippon Keidanren's* voluntary action program to prevent global warming, the Japan Chemical Industry Association (JCIA) set a target for 2010 of a 10% or more reduction in per unit energy consumption from the 1990 level. In order to achieve this target, Tosoh plays an active role in various energy-saving projects.

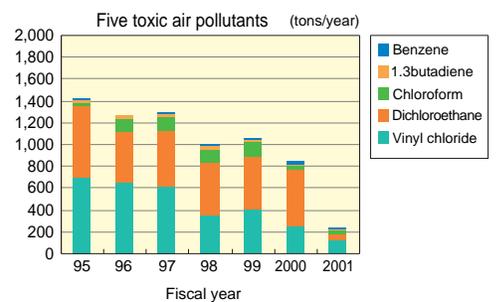
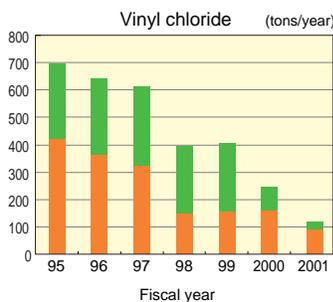
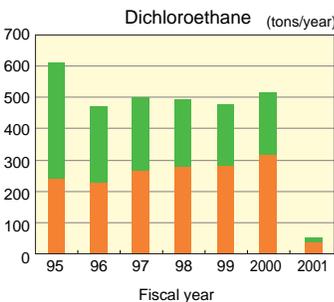
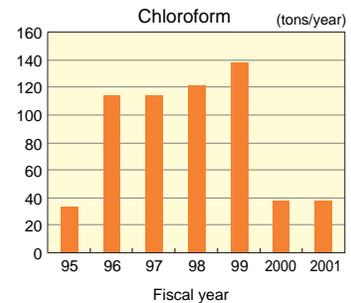
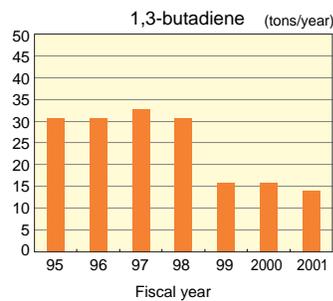
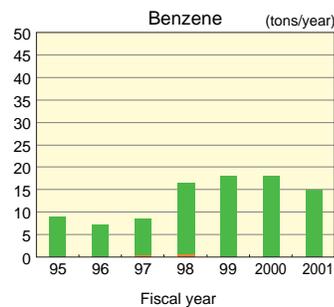
*Nippon Keidanren is a Japan business federation and economic organization established in May 2002 by amalgamation of Keidanren (Japan Federation of Economic Organizations) and Nikkeiren (Japan Federation of Employers' Associations). The mission of the Federation is to achieve a private sector-led, vital and affluent economy and society in Japan.



3-2. Air

Toxic Air Pollutants

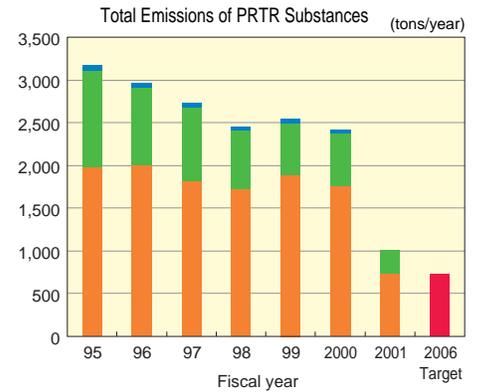
The Ministry of Economy, Trade and Industry and the Ministry of Environment in Japan listed 12 toxic air pollutants to be voluntarily controlled by the industrial sectors. In collaboration with JCIA, Tosoh is working to reduce the emissions of these pollutants. Because Tosoh emits five of the 12 pollutants listed, it adopted an exhaust gas incineration system and succeeded in reducing the emissions of dichloroethane and vinyl chloride in fiscal 2001 to below 1/12 and 1/5 the emissions levels in fiscal 1995, respectively. Accordingly, the total emission of the five substances declined significantly to below approximately 1/6 the total emission level in fiscal 1995. A further reduction in emissions is expected in the future.



■ Nanyo Complex ■ Yokkaichi Complex ■ Toyama Plant

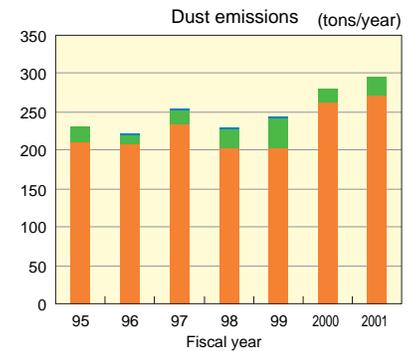
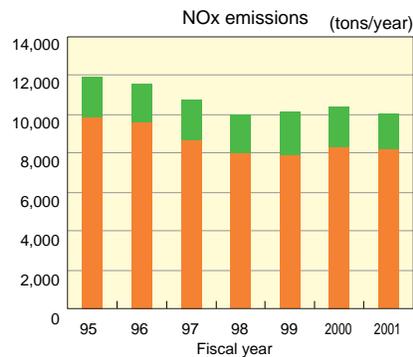
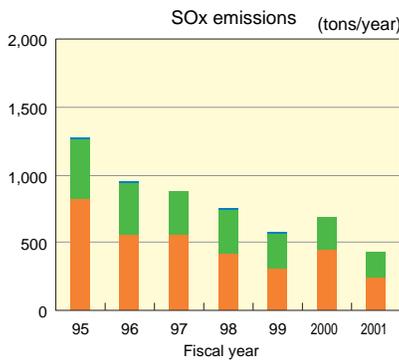
Substances Subject to the PRTR Law

In fiscal 2001, Tosoh reported the emission of 44 of the 354 substances stipulated in the PRTR law. PRTR (Pollutant Release and Transfer Register) is a register of quantities of selected chemical substances released into the environment. It is being promoted internationally as an overall and effective means for reducing and controlling impediments to environmental protection caused by chemical substances. PRTR was adopted at the 1992 Global Summit and the introduction of PRTR was recommended in Agenda 21 and the Rio de Janeiro Statement. The PRTR Law was enacted in Japan in July 1999. Of the 44 substances reported, 26 have an emission rate of at least 0.1 tons per year. Tosoh reduced total PRTR substance emissions in fiscal 2001 to approximately 36% of the fiscal 1995 level.



Legend: Nanyo Complex (Orange), Yokkaichi Complex (Green), Toyama Plant (Blue), Tosoh's Target (Red)

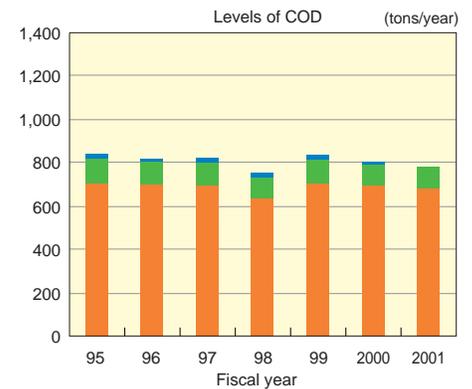
Air pollutants



Legend: Nanyo Complex (Orange), Yokkaichi Complex (Green), Toyama Plant (Blue)

3-3. Water

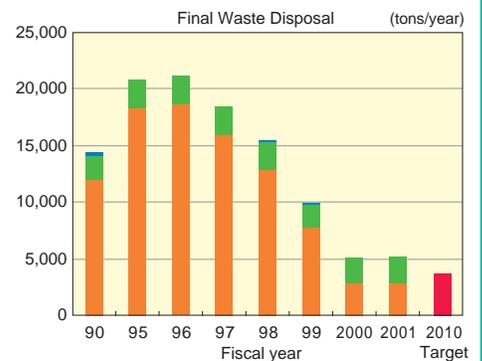
In fiscal 2001, Tosoh consumed 59 million tons of water (excluding seawater) and discharged 1,039 million tons. The levels of chemical oxygen demand (COD) are shown in the graph on the right.



Legend: Nanyo Complex (Orange), Yokkaichi Complex (Green), Toyama Plant (Blue)

3-4. Waste

To help bring about a recycling-based society, Tosoh promotes the effective utilization of waste as well as reductions in final waste disposal. In fiscal 2001, Tosoh discharged 11,000 tons of waste for incineration and 5,000 tons for final disposal.

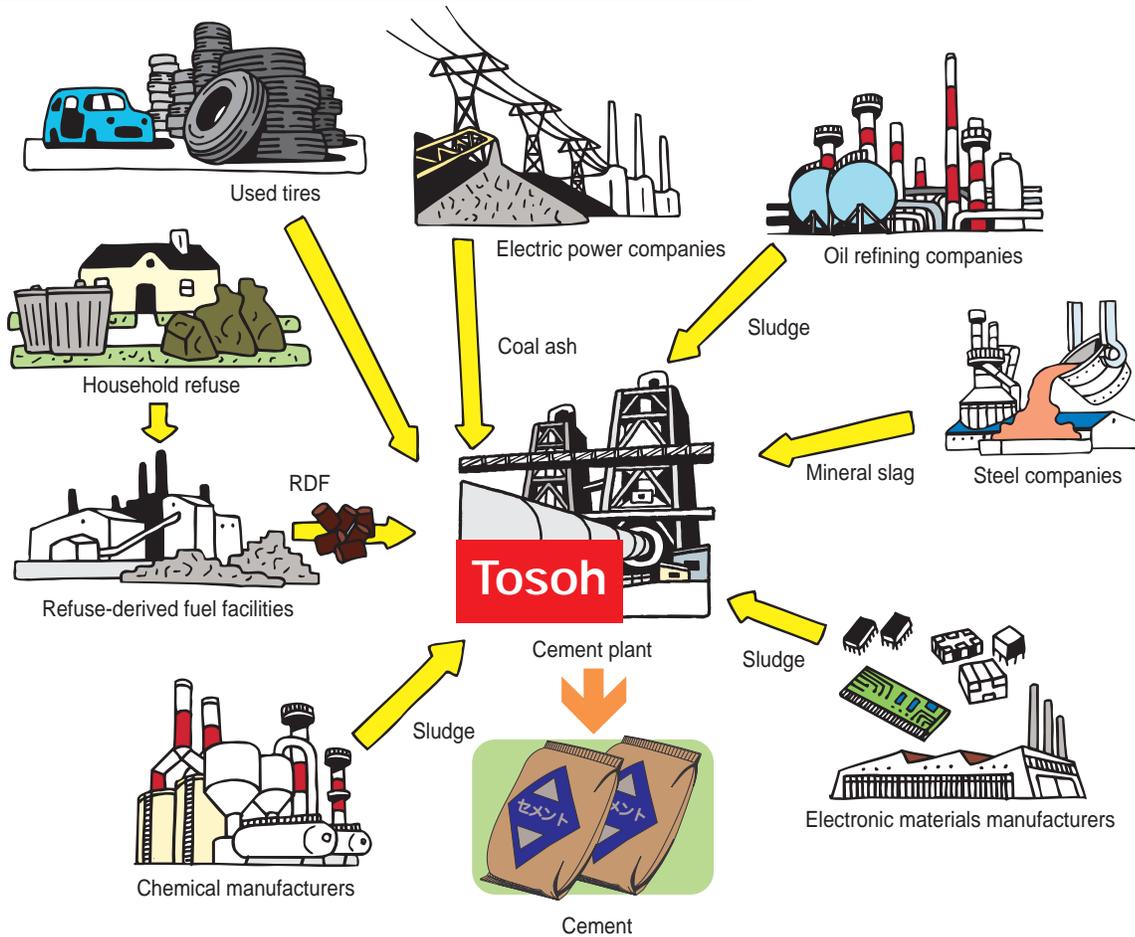


Legend: Nanyo Complex (Orange), Yokkaichi Complex (Green), Toyama Plant (Blue), Tosoh's Target (Red)

Effective Utilization of Waste

Tosoh puts great effort into using raw materials efficiently and reducing waste. It actively improves the utilization of waste by recovering resources from them. The Company accepts waste, such as sludge, waste acid, waste alkali, and waste oil, from not only its own manufacturing complexes but also outside plants. The waste then goes through effective material recycling, thermal recycling, and chemical recycling.

Recycling Facility (Cement Plant)



Cooperation with the local community=Waste recycling

Halogen Recycling Facility

Tosoh collects many different kinds of waste liquids from its manufacturing complexes as well as from pharmaceutical, agricultural chemical, and chemical compound manufacturers and sends the collected waste to its own chlorine and bromine recycling facilities. The recovered materials, such as hydrogen chloride and hydrogen bromide, are used in VCM and flame retardants, and the heat from the recycling process is used to generate steam.



Chlorine recycling facility



Bromine recycling facility

"Phoenix": Shunan City's Refuse-Derived Fuel (RDF) Facility

An RDF facility dubbed "Phoenix" was built in Shunan City in Yamaguchi Prefecture to make RDF from household waste. Tosoh is cooperating with the city's environmental administration by using RDF as raw material and fuel for its cement plant.



The RDF Facility in Shunan City
The phoenix, an immortal bird, symbolizes regeneration and new life.

3-5. Capital Investment in Safety and the Environment and Its Effects

Tosoh promotes efforts to reduce emissions into the environment to prevent pollution and health damage by improving manufacturing processes and operating its facilities more efficiently.

This involves not only the observance of regulations and standards, and local agreements but also the carrying out of voluntary environmental protection programs.

Environmental Conservation Costs

(millions of yen)

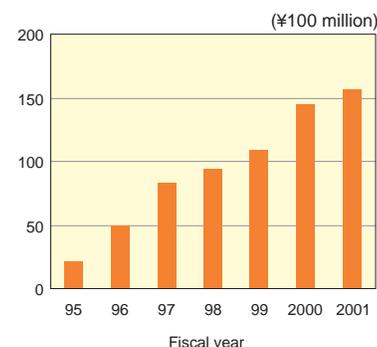
Classification		Amount of Investment	Operating Cost	Summary of Main Project
(1) Environmental conservation cost of controlling the environmental burden of neighboring areas as a result of production- and service-related activities (costs generated in the area of operations)	Cost of preventing pollution	146	1,897	Investment: Control of discharge, replacement of sewage treatment tanks Cost: Cost of maintaining and controlling operations, cost of providing compensation for pollution-related health damage
	Cost of conserving the global environment	380	0	Investment: Energy-saving measures
	Cost of recycling resources	203	271	Investment: Treatment of uncontaminated soil and sand and industrial waste Cost: Cost of maintaining and controlling waste disposal, cost of waste disposal
(2) Cost of controlling the environmental burden upstream and downstream as a result of production- and service-related activities (upstream/downstream costs)		0	0	
(3) Environmental conservation costs associated with management operations (cost of management operations)		0	167	Cost: Cost of assessing environmental policies; cost of analyzing air, water quality, and soil; cost of maintaining and managing ISO 14001
(4) Environmental conservation costs associated with research and development activities (cost of research and development)		0	2	Cost: Cost of registering new chemical substances controlled by the Law on Industrial Safety and Hygiene
(5) Environmental conservation costs (cost of social activities)		5	45	Investment: Planting in surrounding areas Cost: Cost of maintaining and managing the surroundings and working with the local community
(6) Cost of covering environmental damage (costs resulting from environmental damage)		0	0	
Total		734	2,382	

Resulting Reduction in Environmental Burden

		Fiscal 2001	Fiscal 2000	Increase/Decrease
Reduced emissions into the environment	SOx (100 tons)	4	7	- 3
	NOx (100 tons)	101	104	- 3
	COD (tons)	794	795	- 1
	Dust (tons)	297	284	13
	PRTR substances (tons)	1,017	2,374	- 1,357
Reduced disposal of waste	Final disposal of waste (1,000 tons)	5	5	0

Total Amount Invested in Environmental Conservation and a Safety Assurance System

Tosoh continues to invest in its safety assurance system as well as the environmental conservation system described above. In fiscal 2001, the total amount invested to date in environmental conservation and the Company's safety assurance system exceeded ¥15 billion.



3-6. Environmental Complaints

In fiscal 2001, Tosoh received a total of three environmental complaints: two for offensive odors and one for noise.

Safety Assurance Measures

Aiming to eliminate accidents and industrial accidents, Tosoh strongly enforces safety measures that ensure the safe operation and proper maintenance of equipment. Such safety measures include design safety assessments at the time of new installations or expansions, safety inspections before operation, employing the latest inspection and maintenance technologies to confirm that equipment is in sound condition, and periodically reviewing operating supervision and manuals that include safety control systems.

Particularly important safety measures that are being implemented are as follows:

- Implementing the following key concepts (orderliness; organization; tidiness; hygiene; and discipline)
- Improving and maintaining safety technology by means of voluntary safety approvals
- Promoting safety operation measures (simulating operations)
- Eliminating industrial accidents through the analysis of previous accidents and close calls

Voluntary Safety Approvals for High-Pressure Gases

Under this system, the Ministry of Economy, Trade and Industry evaluated Tosoh's self-assessment of its supervision of high-pressure gas operations, equipment maintenance, safety systems, and inspections. If ministerial approval is granted, Tosoh manufacturing complexes will be able to conduct safety and completion inspections on their own.

Nanyo Complex: Certified May 1987, updated Sept. 1999, additionally certified Nov. 2002 (11 facilities)

Inspections subject to certification: Safety inspections (in and out of operation)

Yokkaichi Complex: Certified May 1987, updated March 1999

Inspections subject to certification: Safety inspections (in and out of operation), completion inspections

Analysis of Previous Accidents and Close Calls

Examples of accidents inside and outside the Company are analyzed thoroughly to prevent similar incidents. In analyzing and applying examples of close calls, any alarming experience encountered by an employee or industrial activity that is considered to be dangerous is entered in a data base and applied in the study and implementation of safety measures, education, and training. By submitting their experiences of close calls, employees improve their awareness of safety and contribute to reducing industrial accidents.

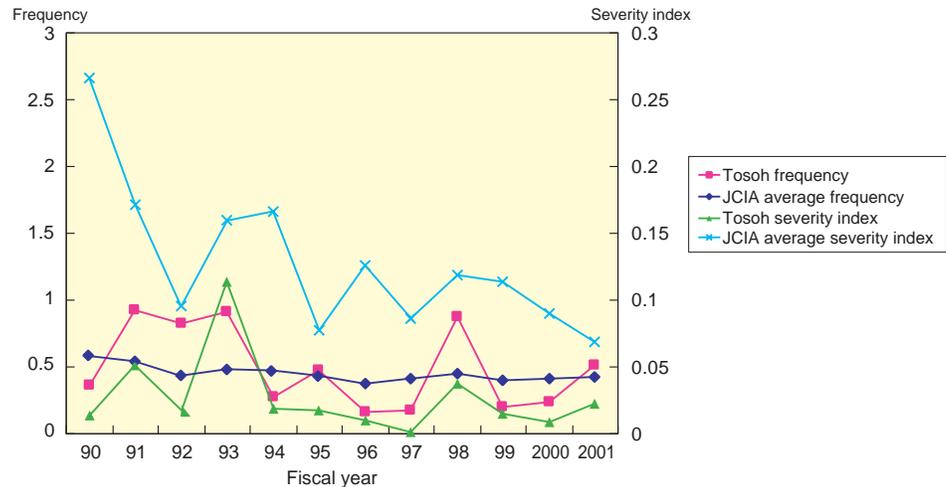
Safety Operation Measures (Simulating Operations)

The Nanyo Complex began simulating operations as part of its VCM plant operating system, and the Yokkaichi Complex installed a dynamic simulator at its Technology Research Center, which it uses in employee training and education. Such training and education is expected to have a significant effect on the safety of plant operations.



Severity Index and Frequency of Industrial Accidents

Tosoh actively promotes measures that reduce industrial accidents to zero. Nevertheless, in fiscal 2001 there were two cases in which accidents resulted in time off from work. As a result, both frequency and severity index of that fiscal year rose higher than those of the previous fiscal year. We will continue making further efforts to promote safety activities with the aim of eliminating accidents completely.



Frequency: (number of deaths and injuries/aggregate working hours) × 1,000,000
 Severity index: (total workdays lost/aggregate working hours) × 1,000

Presentations on Safety Activities, RC Activities, and Disaster Prevention Training

Presentations on safety activities and RC activities and routine disaster prevention training are given as one aspect of safety training at manufacturing complexes and research facilities.

Presentations on Safety Activities and RC Activities (Fiscal 2001)

Manufacturing Complex/Research Facility	Date of Implementation	No. of Participants	Description
Nanyo Complex	July 19	140	Examples of safety activities and other initiatives at four Tosoh worksites, two affiliated companies, and one supporting company
Yokkaichi Complex	July 6	151	Activities implemented at Tosoh and one supporting company
Tokyo Research Center	July 24	90	Six items, including an action plan to prevent clean room accidents, electric furnace safety measures, and traffic safety measures

Comprehensive Disaster Prevention Training (Fiscal 2001)

Manufacturing Complex/Research Facility	Date of Implementation	No. of Participants	Description
Nanyo Complex	October 17	335	Preparation for hazardous substance leaks, fires, or injuries at the Tosoh Organic Chemical Plant #2 following an earthquake of seismic intensity 5 (with the participation of the municipal fire department headquarters)
Yokkaichi Complex	September 2	830	Preparation for hazardous substance leaks at the PPS plant and fires following a large-scale earthquake whose epicenter lies directly beneath the site (with the participation of other companies at the Kasumi Complex)
Tokyo Research Center	September 5	178	Training consisted of disaster prevention, firefighting, relief, evacuation, and other activities



5

2002
Responsible Care

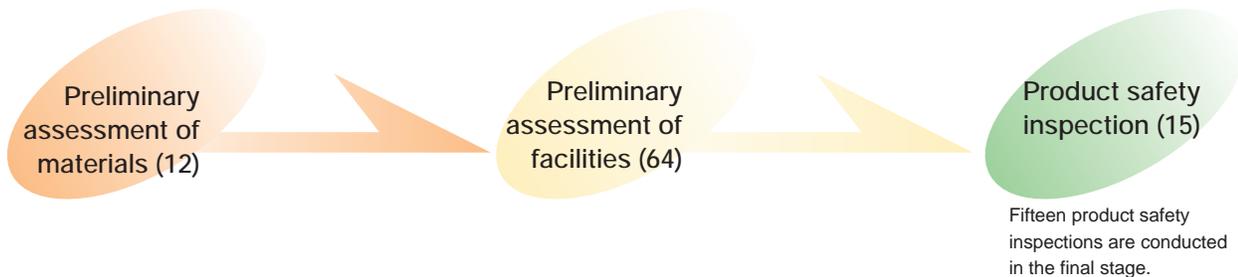
Product-related Environmental Protection and Safety Measures

5-1. Product Design Considerations

Tosoh designs products with safety, health, and the environment in mind, from the raw materials stage through product disposal. The Company never develops a product without the approval of the Product Safety Committee.

Number of Preliminary Assessments (Fiscal 2001)

When developing a new product, Tosoh first assesses the degree of hazard it poses. Then, it determines whether the specifications and capacity of the plant to produce that product are suitable. Finally, it conducts a comprehensive, multifaceted, three-phase survey on the product's safety to prevent product liability problems.



5-2. Providing Product Information

Material Safety Data Sheets (MSDS) are prepared for all Tosoh's chemical products to provide appropriate information to the user concerning risk and toxicity. The provision of MSDS is mandatory under the PRTR Law; the Poisonous and Deleterious Substances Control Law; the amended Industrial Safety Health Law; and others.

Items Recorded on an MSDS

- Product and company data
- Components and ingredients
- Hazards
- Emergency measures
- What to do in the event of a fire
- What to do in the event of a spill
- Handling and precautions relating to storage
- Protective measures and means of preventing exposure

- Physical and chemical properties
- Safety and reactivity
- Data on hazardous properties
- Environmental impact data
- Precautions relating to disposal
- Precautions relating to transport
- Applicable laws and ordinances
- Other data

5-3. Assuring Chemical Product Safety

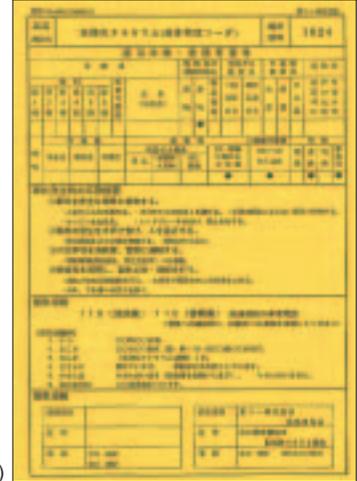
Collection of Data on Hazards and Toxicity

Tosoh actively participates in voluntary activities conducted by the International Council of Chemical Associations (ICCA). This ICCA initiative involves the collection of data necessary to assess the toxicity of chemical substances with high production volume (HPV). Tosoh is in the process of registering all 27 of its chemical substances. It is currently preparing hazard assessments on them to be submitted to the OECD's expert panel. As of December 2002, Tosoh completed hazard and toxicity assessments on 10 of its substances, thereby contributing to ICCA HPV activities. Also, Tosoh is participating in the Long-Range Research Initiative (LRI), which researches the impact of chemical substances on human health and the environment, with the cooperation of chemical industries in the United States, Europe, and Japan through the Japan Chemical Industry Association (JCIA).

5-4. Securing Safety during Transport

Distribution Safety Measures

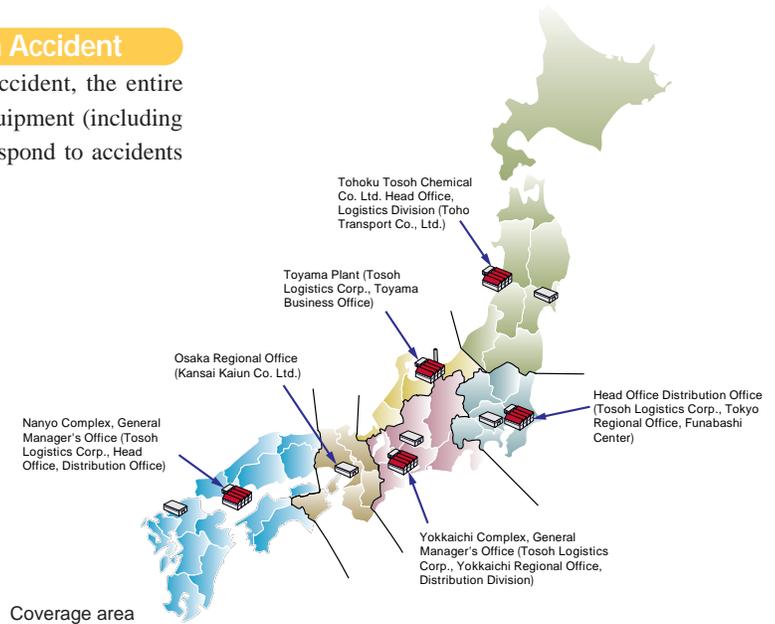
Tosoh fully complies with transportation safety guidelines put forth by the RC distribution organization, which are designed to prevent accidents during the transportation of chemical substances. The operator carries a yellow card to ensure that appropriate action will be taken prior to or in the event of an accident.



Yellow card (emergency notification card)

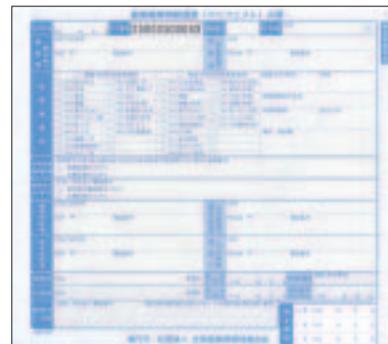
System for Emergency Notification in Case of an Accident

To enable assistance to be given promptly at the time of an accident, the entire country is divided into six zones, and a base with emergency equipment (including protective and damage alleviation equipment) is appointed to respond to accidents or technical support in each zone.



Industrial Waste Disposal Tracking System

Under this system, an operator who discharges waste material issues waste disposal verification forms to the disposal contractor. After the waste is disposed, copies of the forms are returned to the discharge operator, confirming that the waste disposal contractor handled the disposal appropriately. Thus, industrial waste accidents can be averted.



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2002
Responsible Care

Improving Communication

Plant Tours

Tosoh's Nanyo and Yokkaichi Complexes are visited every year by not only customers and business partners, but also elementary school students, teachers, and many others.



On-site Work-Study Program

An on-site work-study program was carried out in October 2001 for junior high school students who live in the vicinity of the Nanyo Complex. After touring the business, education, and plant facilities, the students gained practical experience in the plant's control computer, process analysis, and product package filling operations.



Regional Responsible Care Dialog

On November 20, 2001, nine Yokkaichi RC member companies held the 3rd Yokkaichi Area Responsible Care Regional Dialog to explain their efforts to carry out responsible care-related activities and share their views with the approximately 180 participants, which included local residents, government workers, educators, and private business representatives. After explaining their initiatives for environmental conservation, safety, and regional communication, the companies then invited the participants to an open discussion. This event, held to improve communication, was even more significant with the involvement of two citizens groups.



Experimental Science Museum

Experimental Science Museum was opened in Hofu City, Yamaguchi Prefecture, in October 2001 to encourage children to become interested in chemistry. Tosoh had set up a booth in the museum, where it displayed coasters made of ethylene-vinyl acetate copolymers (EVA), one of the Company's products.



Mie Community Environment Fair 2002

The Mie Minna de Tsukuru Kankyo Fair 2002, sponsored by Mie Prefecture, was held in June 2002. The Tosoh Analysis & Research Center was an exhibitor at the fair while Tosoh participated as a member of the Vinyl Environmental Council.



Eco Park Memorial Event

Eco Park Memorial Event was held in July 2002 to commemorate the Japan Expo Yamaguchi 2001. The event received support from a broad range of representatives, from government administration to education and business. With our own exhibit on recycling, Hokuetsu Kasei Co., Ltd., one of our group affiliates, displayed its recycled disposable lunch box trays and other products.



Volunteer Activities

Tosoh Corporation actively participates in local volunteer activities.



Volunteering to Help Preserve Japan's Forests

Since 1997, Tosoh has done its part to preserve Japan's forests by volunteering to clear undergrowth and participate in other activities every year as a member of the Shunan Region Industrial Water Users Council in Yamaguchi Prefecture. In September 2001, there were 50 employees who volunteered.



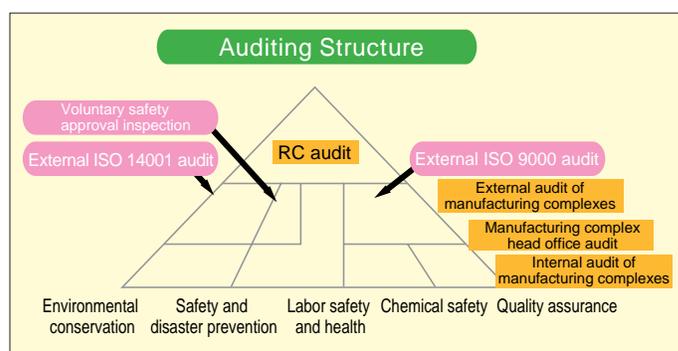
Cleanup Campaign in Shinnanyo City

In June 2001, approximately 400 Nanyo Complex employees and their families cleaned the main streets of Shunan City.

Audits

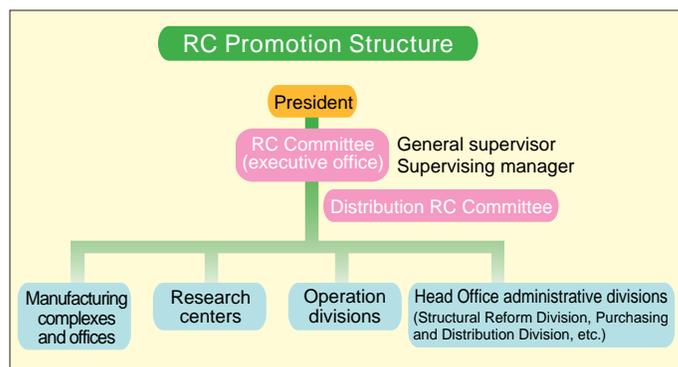
RC Audits Conducted at Tosoh

The executive in charge of environmental protection and quality control assurance audits Tosoh's manufacturing complexes to assess the Company's RC activities. The results of the audit are ultimately reported to the president who, in turn, gives instructions based on those results. In addition to these audits, the Company is subject to external ISO 14001 and ISO 9000 audits as well as external inspections based on voluntary safety approval to ensure that the system is reliable.



RC Promotion Structure

An RC Committee that is directly linked to top management has been established, and the creation of RC policies and the assessment of activities are carried out by a companywide body. Responsibility for RC is placed on all division heads in the Company. The Responsible Care Codes established by JRCC forms the basis of the management system used to promote RC activities.



RC Audits Conducted at Manufacturing Complexes

Inspections supervised by the director of environmental safety and quality control are carried out every year.

Nanyo Complex Full inspection November 2001

Yokkaichi Complex Full inspection November 2001

RC audits are conducted in five areas: environmental conservation, safety and disaster prevention, labor safety and health, chemical safety, and quality assurance. The RC audits conducted this fiscal year placed special emphasis on the PRTR Law, the actual state of waste disposal, and environmental complaints. According to the audits, both complexes scored well in all five areas. Furthermore, preliminary audits were conducted in the areas of safety and disaster prevention and safety and health prior to the full audit to make it more substantial.

RC Committee Approval and Companywide Guidelines

On January 29, 2002, the RC Committee granted its approval for Tosoh's RC activities as a whole (appraisal of records with regard to guidelines and objectives). On February 5, news of the approval was given to Takashi Tsuchiya, president and COO, who approved the fiscal 2002 Responsible Care plan.

Auditing Tosoh Group Affiliates

Tosoh Group affiliates are subject to audits covering a total of 46 items, including environmental and safety initiatives, safety and health, environmental management, and industrial waste.

In fiscal 2001, audits conducted at 18 companies (manufacturing, construction, transportation, etc.) revealed areas that needed improvement, and in response to these findings, instructions were issued regarding the Waste Management and Public Cleansing Law, which just recently underwent a broad revision, and other areas.

Responsible Care Verification: Third Party Inspections

The Company underwent third-party inspections conducted by the JRCC Responsible Care Verification Center on April 9 and 10, 2002.

The inspections covered three codes, i.e., safety and disaster prevention, distribution safety, and environmental conservation, and together with the three codes covered in the pilot verification the previous year, namely, management system, labor safety and health, and performance disclosure and dialogs, a total of six codes have been verified at the Company.

ISO Certification

Tosoh and Tosoh Group affiliates actively encourage the acquisition of ISO certification.

ISO 9001/2		ISO 14001	
Tosoh Corporation	Nanyo Complex (certified 1993) Yokkaichi Complex (certified 1995) Tokyo Research Center (certified 1994)	Tosoh Corporation	Nanyo Manufacturing Complex (certified 1998) Yokkaichi Manufacturing Complex (certified 1999)
Tosoh Group Domestic Affiliates	Tosoh F-TECH, Inc., Taiyo Vinyl Corporation, Tosoh SGM Corporation, Tosoh Quartz Corporation, Tosoh Speciality Materials Corporation, Tosoh Zeolum Inc., Tosoh Hyuga Corporation, Tosoh Finechem Corporation, Tosoh Logistics Corporation, Tosoh Analysis & Research Center Co., Ltd., Tosoh Organic Chemical Co., Ltd., Tohoku Tosoh Chemical Co. Ltd., Nippon Silica Industrial Co., Ltd.	Tosoh Group Domestic Affiliates	Kasumi Kyodo Jigyo Co., Ltd., Taiyo Vinyl Corporation, Tosoh SGM Corporation, Tosoh Plant Services Corporation, Tosoh Quartz Corporation, Tosoh Information Systems Co., Ltd., Tosoh Speciality Materials Corporation, Tosoh General Services Co. Ltd., Tosoh Finechem Corporation, Tosoh Analysis & Research Center Co., Ltd., Tosoh Organic Chemical Co., Ltd., Nippon Silica Industrial Co., Ltd.
Tosoh Group Overseas Affiliates	Delamine B.V. (The Netherlands), Tosoh Quartz, Inc. (USA), Tosoh SMD, Inc. (USA), Tosoh Hellas A.I.C. (Greece), Tosoh Quartz Ltd. (UK), Holland Sweetener Company V.O.F.(The Netherlands), Tosoh Bioscience N.V. (Belgium), Tosoh de Mexico (Mexico)	Tosoh Group Overseas Affiliates	Delamine B.V. (The Netherlands), Tosoh SMD, Inc. (USA), Holland Sweetener Company V.O.F. (The Netherlands), Tosoh Quartz Inc. (USA), Tosoh Specialty Materials Corporation

Note: Tosoh's Scientific Instruments Division and Tosoh Group affiliates were awarded ISO 13485 certification, a standard especially intended for medical devices, in July 2002 in addition to ISO 9001 standards for product quality assurance.



TOSOH

TOSOH CORPORATION

3-8-2 Shiba, Minato-ku, Tokyo 105-8623, Japan

Tel: 81-3-5427-5127 Fax: 81-3-5427-5203

E-mail info@tosoh.co.jp URL <http://www.tosoh.com>