Sumitomo Chemical Environment, Health & Safety Report 2003

Responsible Care Activities of Sumitomo Chemical Company, Limited



Responsible Care refers to voluntary activities conducted by companies in the areas of the environment, health, and safety throughout their products' entire life cycles. As of March 2003, there were Responsible Care associations in 47 countries.



Company Overview

Established in 1913, Sumitomo Chemical Company, Limited's origins date back to a copper mine in Besshi, Ehime Prefecture. Sulfur dioxide generated while smelting the copper produced at the mine was a major environmental problem at the time. To overcome the problem, a process was developed using the gas to manufacture calcium superphosphate, a fertilizer. Thus, Sumitomo Chemical started its business as a fertilizer producer. Since its beginnings, Sumitomo Chemical has responded to the needs of the times and has seriously addressed a broad spectrum of issues, including quality, safety, and the environment, while continuing to develop its presence globally in a wide range of businesses.

Founded: September 22, 1913

Commenced

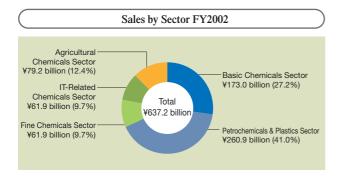
October 4, 1915 operations: Incorporated: June 1, 1925

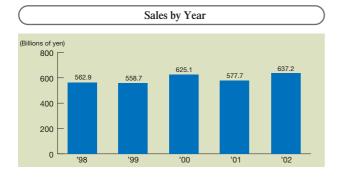
Non-Consolidated Data

Fiscal 2002 Results

¥ 89.6 billion Capital: Net sales: ¥637.2 billion ¥ 27.7 billion Recurring profit: Capital investment: ¥ 58.6 billion R&D expenses: ¥ 33.1 billion

Number of employees: 5,154 (as of March 31, 2003)





Sumitomo Chemical's Main Products (on a consolidated basis)

Basic Chemicals Sector Inorganics, composite fiber materials, (Ehime Works) methacrylate resins, alumina products,

aluminum

Petrochemicals & Plastics (polyethylene, polypropylene, etc.), Plastics Sector plastics materials, synthetic rubber

(Chiba Works)

Fine Chemicals Sector Pesticide and pharmaceutical intermediates, dyestuffs, processing resins

(Osaka Works)

IT-Related Chemicals Sector

Semiconductor and liquid crystal materials (Optically functional films, photoresists, (Osaka Works) epoxy resins, high-purity gallium and

other high-purity chemicals)

Agricultural Chemicals

Sector

(Oita, Misawa Works) Pharmaceuticals Sector (Oita Works)

Plant protection chemicals, household and public hygiene insecticides, feed additives,

fertilizers, animal health products Pharmaceuticals, diagnostic reagents,

health care products

The works mentioned in parentheses are the main production bases for the products.

Consolidated Data

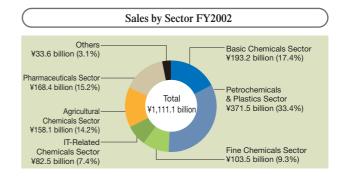
Subsidiaries and Affiliates:

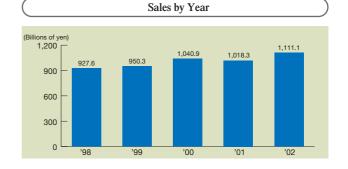
Sumitomo Pharmaceuticals Co., Ltd., Koei Chemical Co., Ltd., Taoka Chemical Co., Ltd., The Polyolefin Company (Singapore) Pte. Ltd., Sumitomo Chemical America, Inc., Valent U.S.A. Corp., and others. Total: 110 companies (as of March 31, 2003)

Fiscal 2002 Results

Net sales: ¥1,111.1 billion Recurring profit: 68.0 billion Capital investment: 152.0 billion R&D expenses: 72.8 billion

Number of employees: 17,906 (as of March 31, 2003)





The main focus of this report is Sumitomo Chemical's environmental and safety activities during the fiscal year ended March 31, 2003.

A record of Sumitomo Chemical's Responsible Care activities has been compiled in this report, prepared with reference to the Japanese Ministry of the Environment's *Environmental Reporting Guidelines* (fiscal 2000 version) and *Environmental Performance Indicators for Businesses* (fiscal 2002 version) as well as the Global Reporting Initiative (GRI)'s *Sustainability Reporting Guidelines*. The environmental performance and accounting data included in this report reflect the aggregate performance of Sumitomo Chemical and its Group companies.

Sumitomo Chemical has been reporting extensively on its environmental and safety activities since fiscal 1997. Each year, the Company issues its *Environment, Health & Safety Report*, and the 2003 report is our sixth. (The 2004 report is scheduled to be issued in October.)

Sumitomo Chemical also works to promote greater understanding of the Company's Responsible Care activities by having each of the Company's manufacturing works hold informative meetings and prepare their own easy-to-follow environment, health, and safety reports for distribution to local residents.

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Message from the President



Growing in Harmony with the Global Environment

Climate change, energy problems, and other global environmental issues present themselves as a major challenge for humankind. To protect the global environment and ensure that the Earth's limited resources are used effectively, there is a strong need to evolve from a society characterized by mass production, mass consumption, and waste to one that is recycling-oriented.

As a member of the chemical industry, Sumitomo Chemical recognizes its responsibility to make its utmost efforts in addressing these problems, with the view to creating a recycling-oriented society and protecting the global environment. Sumitomo Chemical has long been an innovator, inventing many products that are useful for our lives. I believe that this role of chemical companies will become even greater in the future and there will be ample opportunities before us. In our continued efforts to meet such global challenges, it will become more and more important for us to strengthen our activities of Responsible Care—the voluntary initiative of the global chemical industry to continuously improve their environment, health and safety performance.

Responsible Care constitutes a vital cornerstone of Sumitomo Chemical's corporate management, extending beyond our domestic plants and laboratories to all Group companies, both in Japan and overseas. Through the solid implementation of Responsible Care initiatives, we endeavor to preserve the global environment, avoid accidents and injury, and make sure our products are safe. We will in this way fulfill our social responsibility, gain public trust, and strengthen our overall competitiveness.

As a corporate citizen committed to growing in harmony with the global environment, Sumitomo Chemical implements its Responsible Care activities extensively and proactively. Our research scientists continue to work hard to develop new processes that require fewer raw materials and less energy, capitalizing on the wealth of technical know-how and expertise that have been accumulated over many years of research and development activities. Efforts are also directed to cut emissions into air and water and reduce waste, and to implement extensive risk management programs for our products and substances. Our Responsible Care activities are carried out in accordance with the "Corporate Policy on Product Quality, Safety and the Environment." All employees who are engaged in various aspects of our operations—including R&D, production, logistics, marketing and sales—participate all together in the spirit of self-discipline. Furthermore, we actively participate in the promotion of "Sustainable Chemistry" with the view to further reducing waste and environmental risk.

In addition, Sumitomo Chemical plays active roles in the various initiatives of the Japan Chemical Industry Association (JCIA) and the International Council of Chemical Associations (ICCA), promoting Responsible Care on global dimensions.

Highlights of Sumitomo Chemical's Responsible Care activities in fiscal 2002 include "Sustainable Chemistry" achievements such as the coming on-stream of new production facilities based on novel manufacturing processes for caprolactam and propylene oxide. These processes reduce environmental impact while increasing competitive strength.

The Company has completed risk assessments for most of the substances designated by the JCIA Voluntary Management Plan for Air Pollutants and the Law on Pollutant Release and Transfer Register (PRTR). It is moving forward with efforts to further reduce emissions of these substances, utilizing the results obtained from the risk assessments. In addition, soil contamination surveys were conducted at all of Sumitomo Chemical's production sites in Japan to ensure that they are being managed in an appropriate manner.

We strive to ensure that our environment, health, and safety reports are as specific and comprehensive as possible, drawing on the valuable feedback we have received from previous reports. This report has been reviewed by an independent auditing firm for the sake of additional credibility and transparency.

This report is intended to provide an overview of Sumitomo Chemical's Responsible Care activities in fiscal 2002. In the following pages, you will be introduced to our views and positions on product quality, safety and the environment, as well as the specific steps we are taking in those regards. We look forward to receiving your candid comments.

米倉弘昌

Hiromasa Yonekura President

Basic Policies for Responsible Care Activities

In April 1994, Sumitomo Chemical established its "Corporate Policy on Product Quality, Safety and the Environment." The next year, in January 1995, Sumitomo Chemical established its "Policy for Responsible Care Activities," and every year the Company convenes a meeting of the Responsible Care Committee in accordance with these policies. Sumitomo Chemical adheres to the fiscal year plan set by the Responsible Care Committee and promotes Responsible Care activities throughout the Group. (Responsible Care is explained on page 8.)

Sumitomo Chemical has long considered it the Company's social responsibility to carry out its corporate activities in compliance with the mores and rules of society. To this end, Sumitomo Chemical employees have endeavored to execute their daily tasks in conformity with the principles outlined in "Our Code of Conduct." As part of efforts to strengthen our compliance framework, on July 1, 2003, we revised "Our Code of Conduct" as the "Sumitomo Chemical Charter of Corporate Conduct" to demonstrate our heightened commitment to the principles therein.

Sumitomo Chemical Charter for Business Conduct

- 1. We will respect Sumitomo's business philosophy and act as highly esteemed "good citizens."
- 2. We will observe national and international laws and regulations and will carry out activities according to our corporate rules.
- 3. We will develop and supply useful, safe products and technologies that will contribute extensively to the progress of society.
- 4. We will take voluntary and active initiatives to achieve zero-accident and zero-injury operations and to preserve the global environment.
- 5. We will conduct business transactions based on fair and free competition.
- 6. We will endeavor to make our workplaces sound and energetic.
- 7. Every one of us will make efforts to become a professional who has advanced skills and expertise in his or her field of responsibility.
- 8. We will actively communicate with our various stakeholders such as shareholders, customers, and regional communities.
- 9. We, as a corporate member of an international society, will esteem the culture and customs of each region around the world and contribute to the development of those regions.
- 10. We will strive for the sound development of our Company through business activities conducted in accordance with the guiding principles stipulated hereinabove.

June 29, 2000

(Established April 1, 1994)

Corporate Policy on Product Quality, Safety and the Environment

In conformity with the business philosophy of the Sumitomo Group, our Company fulfills its responsibility to develop, manufacture and supply a variety of products which satisfy the fundamental necessities of human life and contribute to the growth of society. Since its establishment, Sumitomo Chemical has managed its activities on the basic principles of (i) ensuring "customer satisfaction," (ii) maintaining "zero-accident and zero-injury operations," and (iii) promoting "co-prosperity with society."

With due respect to these principles, our Company is determined to conduct all activities, including production, R&D, marketing and sales, and logistics, in accordance with the following policy related to product quality, safety, and the environment.

- 1. To supply high-quality products and services that satisfy customer needs and ensure safety in their use
- To maintain zero-accident and zero-injury operations and the safety of neighboring communities and our employees
- 3. To ascertain the safety of raw materials, intermediates, and products, and prevent our employees, distributors, customers, and consumers from being exposed to any possible hazard
- 4. To assess and reduce environmental impact at all operational stages, from product development to disposal, and to exert all practical environmental protection measures

All sections and employees of our Company shall be fully aware of the significance of this policy and shall always strive to improve operational performance while, of course, abiding by all relevant laws, regulations, and standards.

米含弘昌

Hiromasa Yonekura, President Sumitomo Chemical Company, Limited

Policy for Responsible Care Activities

Established January 1995 Responsible Care Committee

To implement the Corporate Policy on Product Quality, Safety and the Environment, the Company has determined specific objectives and methods as follows:

1. Objectives

- Stable operations without accidents or injuries, and a good working environment
- 2) Assessment and reduction of environmental load to maintain coprosperity with society
- 3) Technological improvement to ensure environmental protection and safety throughout the life cycle of a product, thereby contributing to the growth of business

2. Methods

- To abide by regulations on the environment and safety at home and abroad, and improve environmental and safety management standards while abiding by international standards
- 2) To keep the Company well-organized, including in such areas as internal regulations, with clearly defined responsibilities of each section carried out in a timely manner
- To promote the planning, implementation, and improvement of management of environment and safety through Responsible Care audits
- To educate and train employees to better understand and implement Responsible Care activities
- 5) To develop technologies and products to reduce environmental impact at every stage of the product life cycle, from R&D, manufacture, and distribution to disposal, to satisfy social needs
- 6) To support the Responsible Care activities of affiliated companies, including those located overseas

In fiscal 2002, Sumitomo Chemical aggressively expanded its Responsible Care activities in many directions. The Company completed the construction of and commenced operations at facilities that incorporate new manufacturing processes that reduce environmental impact, investigated all Sumitomo Chemical works for soil contamination, and established an Occupational Safety and Health Management System (OSHMS) at all of its works and research laboratories.

Completion of Low Environmental Impact Plants

Using proprietary catalysts, Sumitomo Chemical has developed manufacturing processes that have a low environmental impact and has begun operations at manufacturing facilities that incorporate these processes.

Propylene Oxide Plant with No By-product

In December 2002, Sumitomo Chemical completed construction of a plant to commercialize a new manufacturing process for propylene oxide using new high-performance propri-



etary catalysts without generating the by-product styrene monomer (SM). This new production method allows a compact plant configuration, and the substantial environmental and economic advantages of this process have put it in the worldwide spotlight.

New Process for Fatty Acid Methyl Ester Production

In July 2002, Sumitomo Chemical developed a new method to produce fatty acid methyl esters without generating by-products. The process involves the reaction of methanol and non-fossil resources such as vegetable oils in a supercritical state. Fatty acid methyl esters are used as intermediates to make higher alcohols—the raw material for surfactants. Unlike petroleum and other nonrenewable substances, these esters are inexhaustible because they derive from plants. Because fatty acid methyl esters burn free of SO_x emissions, they are being considered an ideal biofuel for diesel engines.



Ehime Works

Plant for Caprolactam Production via Vapor-Phase Beckman Rearrangement

Using a proprietary Vapor-phase Beckman Rearrangement with a newly

developed catalyst, Sumitomo Chemical has successfully developed an innovative process for the production of caprolactam, a raw material for nylon. Unlike conventional caprolactam production processes, this new technology produces caprolactam without generating ammonium sulfate



as a co-product, by combining new processes from Sumitomo Chemical and the Italian petrochemical company EniChem. Construction of the new plant—the first in the world to commercialize this new process—was completed in February 2003.

New Process for LCP Production

In October 2002, Sumitomo Chemical developed a new manufacturing method for Liquid Crystalline Polymer (LCP) that differs from conventional methods in that it employs a basic organic catalyst to substantially boost the reaction rate between monomers and reduce unwanted side reactions, thus improving the energy consumption rate. In addition, the catalyst does not remain in the polymers as it is removed from the reaction system along with by-products. Thus, the quality of the LCP is equivalent to that of LCP produced by conventional methods. Another attractive aspect of this process is that its implementation requires little additional investment, merely requiring the installation of catalyst feed systems at existing facilities.



Chiba Works

Chemical Risk Assessments Completed

In March 2003, Sumitomo Chemical completed risk assessments at its facilities of chemical substances designated by the PRTR Law that are emitted in large volumes. Sumitomo Chemical will use this information to



set goals for emission reduction and work to achieve these goals.

Co-generation System Receives Institutional Support as Priority Enterprise

Compared to conventional systems, the co-generation system established in November 2002 at Sumitomo Chemical's Oita Works allows for a wider range of adjustments to be made to the amount of steam and electricity produced. The system is also environmentally friendly because it uses nat-

ural gas as fuel. Both the New Energy and Industrial Technology Development Organization (NEDO) and the Ministry of Economy, Trade and Industry (METI)'s Agency for Natural Resources and Energy have expressed support for this co-generation system by designating it a priority enterprise that promotes the use of new energy.



GMP-Compliant Production Facilities for Antibiotic to Be Built on Oita Works' Premises

Sumitomo Chemical is building production facilities for the carbapenem antibiotic meropenem developed by Sumitomo Pharmaceuticals. The facil-

ities, which are slated for completion in September 2003, will meet international Good Manufacturing Practice (GMP) requirements* and will oversee both production and quality assurance for meropenem.



* Quality and production management standards for pharmaceuticals



Soil Contamination Surveys Conducted at All Works

Sumitomo Chemical proactively conducted soil contamination surveys prior to the Soil Contamination Countermeasures Law (enacted in February 2003) and the Stockholm Treaty on Persistent Organic Pollutants (POPs), and, in March 2003, following its air and water pollution surveys, it completed soil surveys at all of its works.

New Technology for Formaldehyde-Free EVA Emulsion

In November 2002, Sumitomo Chemical developed a new polymerization technology to produce *Sumikaflex*[®], a formaldehyde-free ethylene-vinyl acetate (EVA) emulsion, using a catalyst derived from a food additive. Formaldehyde is a common cause of sick-house syndrome.

OSHMS at All Works and Research Laboratories, Chiba Works First to Receive JISHA Certification

In May 2003, Sumitomo Chemical completed the establishment of an Occupational Safety and Health Management System (OSHMS) at all of its works and research laboratories. This program was launched at our Chiba Works prior to introduction at other companies in Japan, and the Works has

been highly regarded for its safety and health management initiatives. For its achievement, the Chiba Works has received OSHMS certification from the Japan Industrial Safety and Health Association (JISHA).









Misawa Works

Oita Works

Responsible Care Initiatives: Targets and Progress in Fiscal 2002

Sumitomo Chemical has set specific targets for its Responsible Care activities, to direct activities in the areas of environmental preservation, process safety and disaster prevention, occupational health and safety, chemical product safety, quality assurance, and audits.

Highlights of Sumitomo Chemical's Responsible Care activities in fiscal 2002 include:

- (1) Tallying up the major consolidated environmental performance data of Sumitomo Chemical and its domestic Group companies
- (2) Pollutant Release and Transfer Register (PRTR) activities encompassing the completion of risk assessments on principal substances, which will be used to ensure the effective management of these substances, and initiatives to improve the operation and functionality of the Companywide PRTR database and promote its use throughout the Group
- (3) 59% reduction in final waste disposal in fiscal 2002, compared with the level in fiscal 1990, thanks to waste reduction activities including recycling and reducing the amount of waste generated
- (4) Steps to reduce dioxin emissions, including substantial improvements to waste incinerators and efforts to ensure effective management of

	Measures Taken	Target					
	Assessment of Group's consolidated environmental performance	Assess the consolidated environmental performance of Group companies					
		Lower CO ₂ emissions to below the fiscal 1990 level by fiscal 2010					
	Prevention of global warming	Create an emission inventory of six major greenhouse gases					
	Energy conservation	Improve the annual consumption per-unit rate by more than 1% on average					
	Energy conservation	Ensure the management of energy use in line with Japan's Law Concerning the Rational Use of Energy					
		Ensure accurate, prompt reporting of release and transfer volumes of substances covered under the PRTR Law					
	PRTR	Promote PRTR risk management					
		Improve the functionality of the Companywide PRTR database					
vation		Consider using the Companywide PRTR database at Group companies					
reser	Emissions reduction of voluntarily controlled hazardous air pollutants	Reduce the total emissions volume for targeted substances (nine substances) 75% from the fiscal 1999 level by fiscal 2003 (second phase of the voluntary emission reduction plan)					
ental F		Promote the "3Rs" (Reduce, Reuse, Recycle); reduce landfill volume in fiscal 2010 by 75% compared with the fiscal 1990 level					
Environmental Preservation	Waste reduction	Work to reduce the amount of waste generated and promote reuse and recycling					
Er	Reduction of dioxin emissions	Promote measures to reduce dioxin emissions at major facilities and ensure management of these facilities is in line with Japan's Waste Management and Public Cleansing Law and the Law Concerning Special Measures against Dioxins					
	Prevention of air pollution, water contamination	Endeavor to continuously reduce chemical oxygen demand (COD) levels and emissions of nitrous oxides (NO _{χ}), sulfur oxides (SO _{χ}), soot and dust, nitrogen, and phosphorous					
	Soil contamination countermeasures	Conduct soil contamination surveys at all plants					
	PCB recovery, storage, and treatment	Promote the appropriate recovery, storage, and treatment of PCBs					
	Management of specific CFCs	Systematically replace those refrigeration units that use specific CFCs as refrigerants					
	Green procurement	Work to meet customers' green procurement needs					
	Environmental accounting	Identify the appropriate environmental costs and promote effective environmental investments					
\$ h =	Sustainable management rating Prevention of accidents and disasters	Participate in Rating Institute for Sustainable Management (SMRI)'s sustainable management rating					
Process Safety and Disaster Prevention		Achieve zero accidents and disasters					
		Acquire ministerial certificate of Approved Operator for Safety Self-Inspection of high-pressure gas facilities					
ional and th	Prevention of occupational accidents	Achieve zero accidents that result in lost workdays					
Occupational Safety and Health	Introduction of OSHMS (Occupational Safety and Health Management System)	Introduce OSHMS at all plants by fiscal 2003					
.≘-		Expand MSDSs (Material Safety Data Sheets)					
Product Stewardshi	Safety management of chemical substances	Maintain and expand internal operations of CHEMSAFE2 (Chemical Safety Database)					
Prc Stew.	,	Implement HPV (High Production Volume) initiative and LRI (Long-Range Research Initiative)					
ty		Obtain certification for the 2000 ISO 9000 series in fiscal 2002					
Quality Assurance	Strengthening of quality assurance system	Use the QIS (customer Quality Information System) to ensure reliable quality information management					
Auditing	Verification of Responsible Care activities	Conduct audits of the Company's and Group companies' Responsible Care activities					
		·					

effluent from the organic pigments manufacturing facility, in accordance with Japan's Law Concerning Special Measures against Dioxins

(5) Soil contamination surveys were completed at all Sumitomo Chemical works, in line with the self-management policy focused on keeping hazardous materials strictly within Company premises and ensuring careful management of these materials

(6) Emissions inventory of six major greenhouse gases

In addition, regarding quality assurance, the Company has started to operate a computer-based information management system, QIS, in order to achieve quick response to customers' complaints and suggestions on the quality of Sumitomo Chemical products.

In fiscal 2002, an audit was done at four of the Company's works, one distribution center, five business divisions, and 10 facilities operated by domestic and overseas Group companies. The second round of audits of 35 domestic Group companies began in fiscal 2002.

The following lists the Company's Responsible Care activities and targets achieved in fiscal 2002.



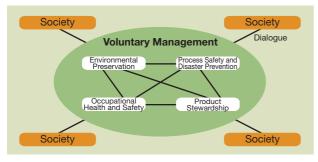




Tallied up the consolidated performance of Sumitomo Chemical and 13 of its domestic Group companies in major environmental areas Increased CO, emissions by 5% over the previous year; this level marked a 10% increase over the fiscal 1990 level. Emissions of the six targeted gases were as follows after CO; conversion: CO; 4,019,000 tons; methane:100 tons; N;O: 196,000 tons; HFC: 200 tons; PFC/SF; 0 tons. Achieved a 1.1% improvement in annual consumption per-unit rate. Using a unit energy consumption index of 100 for fiscal 1990, energy consumption in fiscal 2002 was 89.2 (compared with our target of 88.6). Government surveys of Sumitiono Chemical's five plants confirmed that they are well managed and fully satisfy the Energy Conservation Law's criteria for businesses regarding rational energy use as stipulated by the Minister of Economy, Trade and Industry. All five plants subject to the PRTR Law submitted reports by June 30, 2002. Sumitionon Chemical is currently analyzing the report on PRTR activity findings issued by the Japanese government in March 2003 and will use this information and risk assessment results to establish medium: to long-term emission management integes. Risk assessments on principal substances have been completed. The Company aims to use the results of these assessments to further improve management in this area. Sumitomo Chemical substantially improved the operability and functionality of the database, and enabled faster and more accurate searches as well as data input and output. Group companies were familiarized with the database, and database use throughout the Group is currently being considered. The database has already been introduced at one Group company. In fiscal 2002—the second year of the three-year plan—the volume of emissions totaled 105.9 tons, a 70.2% reduction compared with fiscal 1999 (a 7.7% reduction compared with the previous fiscal year, including 2.700 tons used as raw material for cement. All necessary improvements were made to organic pigment manufacturing	g I	Page
Emissions of the six targeted gases were as follows after CO ₂ conversion: CO ₂ : 4,019,000 tons; methane:100 tons; N ₂ O: 196,000 tons; HC: 200 tons; PKC:F ₂ O tons. Achieved a 1.15 improvement in annual consumption per-unit rate. Using a unit energy consumption infiscal 2002 was 93 2 compared with our target of 88.60. Government surveys of Sumiomo Chemical's five plants confirmed that they are well managed and fully satisfy the Energy Conservation Law's criteria for businesses regarding rational energy use as stipulated by the Minister of Economy, Trade and Industry. All five plants subject to the PRTR Laws submitted reports by June 30. 2002. Sumiomo Chemical is currently analyzing the report on PRTR activity findings issued by the Japanese government in March 2003 and will use this information and risk assessment results to establish medium: lo long-term emission management targets. Risk assessments on principal substances have been completed. The Company aims to use the results of these assessments to further improve management in this area. Sumitomo Chemical substantially improved the operability and functionality of the database, and enabled faster and more accurate searches as well as data input and output. Group companies were familiarized with the database, and database use throughout the Group is currently being considered. The database has already been introduced at one Group company. In fiscal 2002—the second year of the three-year plan—the volume of emissions totaled 105.9 tons, a 70.2% reduction compared with fiscal 1990 (a 3.1% reduction compared with the previous fiscal year). Final disposal volume was 17,635 tons, a 59% reduction from fiscal 1990 (a 7.7% reduction compared with the previous fiscal year). In fiscal 2002, the amount of waste generated was reduced by 75,000 tons from the previous fiscal year, including 2,700 tons used as raw material for cement. All necessary improvements were made to organic pigment manufacturing facilities and four waste incinerators, including fluid		13
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MSDSs to meet JIS specifications.		24
Have input a total of 3,005 chemical substances into the CHEMSAFE2 database, adding another 158 substances in fiscal 2002.		24
Sumitomo Chemical has completed reports on two of the three HPV substances over which it assumes a leadership role. Regarding the LRI on endocrine disrupters, we support the ICCA (International Council of Chemical Associations) through the JCIA (Japan Chemical Industry Association).		24
Obtained certification for the 2000 ISO 9000 series for all five works.		24
Commenced operation of QIS in April 2002. Implemented a system to electronically process information (complaints and suggestions) from customers concerning product quality—a process that was previously paper-based.		25
Audited four works, one distribution center, five business divisions, and ten facilities operated by domestic and overseas Group companies, and started the second round of audits of 35 domestic Group companies in fiscal 2002		26

What Is Responsible Care?

Responsible Care refers to voluntary activities by companies aimed at preserving the environment, safety, and health in all phases of the product life cycle, while deepening bonds of trust with society through dialogue. These activities can be broadly categorized into four areas: environmental preservation, process safety and disaster prevention, occupational health and safety, and product stewardship.



The Responsible Care Committee

Sumitomo Chemical's Responsible Care Committee comprises the board members in charge of the Company's five business sectors and the Pharmaceuticals Business Planning & Coordination Office, the board members in charge of the administrative departments, and the heads of each of the five manufacturing works. The committee is responsible for implementing the "Corporate Policy on Product Quality, Safety and the Environment," making long-term plans, and conducting



The Responsible Care Committee Meeting, March 4, 2003

Responsible Care internal audits. Furthermore, to implement specific Responsible Care measures, committees have been set up at each of the Company's manufacturing works and research laboratories.

When necessary, a subcommittee of specialists convenes to implement the initiatives of the Responsible Care Committee.

Sumitomo Chemical's Responsible Care Organization

Responsible Care Rules and Regulations

To make the "Corporate Policy on Product Quality, Safety and the Environment" even more tangible, the Company formulated the "Policy for Responsible Care Activities," clarifying specific objectives and methods to realize them.

In addition, the Company has systematically established various rules and regulations to promote Responsible Care.

Responsible Care-Related Rules and Regulations

Sumitomo Business Philosophy

Sumitomo Chemical Charter of Corporate Conduct

Corporate Policy on Product Quality, Safety and the Environment

Policy for Responsible Care Activities

Rules

Compliance Rules

Responsible Care Rules

Responsible Care Committee Rules

Risk and Crisis Management Rules

Logistics Rules

Health and Safety Control Rules

Regulations

Process Development and Commercialization Management

Environmental Management

Process Safety Management

Chemical Safety Management

Management of Chemical Weapons-Related Substances

Management of Regulated-Freight Transactions

Detailed Rules for the Implementation of Health and Safety Management

Product Safety

Plastic Recycling Special Committee

:

Guidelines

Safety Management Chemical Safety Management

GMP Management

Customer Quality Data Management

Quality Control of Subcontracted Products

Responsible Care Internal Audits

Environmental Audits

Safety Audits

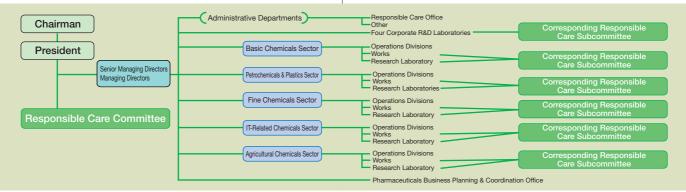
Chemical Safety Management Audits

Audits of the Management of Regulated-Freight Transactions

Product Liability Audits

Responsible Care Audits of Group Companies

- :



Responsible Care Audit System

We conduct Responsible Care audits to ensure that Responsible Care activities are being implemented correctly. Responsible Care audits comprise specialized audits—namely Environment, Health & Safety (EH&S) audits—which are conducted by environment, safety, and product liability experts, and management audits, which are conducted from a managerial perspective by a special team headed by a member of the Responsible Care Committee.

[Responsible Care Internal Audits]

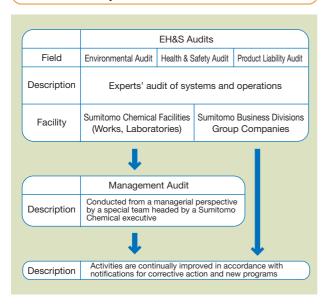
Each of the Company's works in five different regions and three R&D facilities is audited in two stages: EH&S audits and management audits.

In addition, EH&S audits are carried out in each of the Company's five business sectors and at a transfer terminal of the physical distribution system.

EH&S audits are conducted by a team of specialists who use a checklist that covers all aspects of Responsible Care to determine current levels of performance and specific areas that can be improved upon.

Management audits are used to evaluate progress in all areas of Responsible Care and determine if adequate measures are being taken to solve issues and bolster areas cited for improvement in EH&S audits.

Responsible Care Internal Audits



[Responsible Care Audits for Group Companies]

EH&S audits are carried out at Group companies that are involved primarily in manufacturing. These audits are conducted by a team of specialists who use a streamlined checklist to evaluate performance in the three following main areas: progress in Responsible Care activities, observance of relevant laws, and bringing areas of concern to attention and establishing measures to remedy such areas.

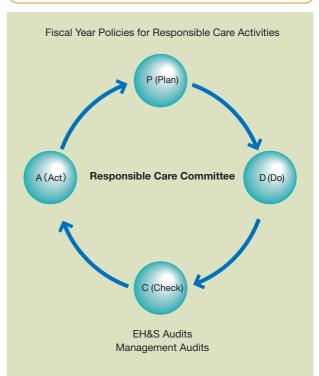
The PDCA* Cycle of Responsible Care Activities

The Responsible Care Committee sets the "Fiscal Year Policies for Responsible Care Activities" for the next fiscal year, based on the results of activities conducted as part of such policies as well as the results of the Responsible Care audits.

By completing the full PDCA cycle for Responsible Care activities, we are improving the level of such activities.

* PDCA: Plan, Do, Check, Act

The Responsible Care Management System



Collaboration with Group Companies on Responsible Care Activities

Sumitomo Chemical Group companies share the Sumitomo Chemical fiscal year policies for Responsible Care, while also pursuing Responsible Care activities based on independent Responsible Care objectives.

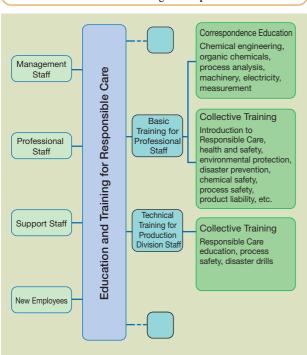
Sumitomo Chemical also strives to share the latest information on Responsible Care with its Group companies. These efforts include Sumitomo Chemical's biannual meetings of the Group Company Information Exchange Committee to promote widespread information sharing in the five key areas of Responsible Care.

Education and Training for Employees

Responsible Care education and training are conducted for all employees throughout Sumitomo Chemical.

Managers and staff engaged in manufacturing, logistics, marketing, sales, procurement, and R&D are provided with specialized training so that they may deepen their understanding of Responsible Care as professionals working at a chemical company. The training covers safety, health, environmental preservation, disaster prevention, chemical safety, regulated substances, quality assurance, and product safety, and is based on our Responsible Care curriculum. In addition, for the supervisors of our manufacturing facilities, a special technical training course is available for all our production divisions. This training enables supervisors who are working on the front line of production to improve the technical skills their positions require. As part of this training, employees must take part in a variety of safety and disaster prevention drills, which cover explosion risk, static electricity, reactive chemical substances, risks associated with the mixing of chemicals, and disaster assessments. The training ranges from basic principles to practical applications of the material covered. The Companywide system for Responsible Care education is being centrally administrated by the Responsible Care Office. Training is also provided to the employees of affiliated companies whenever necessary.

Education and Training for Responsible Care



Management System Based on International Standards



ISO 14001 certification for environmental management systems and ISO 9000 series certification for international product quality assurance, both issued by the International Standardization Organization, were obtained

to effectively promote environmental protection and quality assurance activities in accordance with Sumitomo Chemical's "Corporate Policy on Product Quality, Safety and the Environment." From 1997 to



1999, all five works acquired ISO 14001 certification. This certification is renewed every three years.

Among Sumitomo Chemical Group affiliates, 14 domestic companies and two overseas companies had acquired ISO 14001 certification as of March 2003.

Works and

Certification Number Ehime Works: JCQA-E-018 April 13, 1998 Chiba Works: KHK-97ER-04 June 26, 1997 Osaka Works: JQA-E-90072 November 28, 1997 Oita Works: JQA-E-90152 March 31, 1998 Misawa Works: JQA-EM0355 March 5, 1999

Sumitomo Chemical had received ISO 9002 certification for international product quality assurance at all five of its works as of the end of 1995.

The ISO 9000 series were substantially revised and subsequently issued in December 2000. To appropriately deal with the revised version of this international standard, Sumitomo Chemical further improved its product quality assurance activities. Preparations for the transition to the 2000 version of ISO 9001 certification went as scheduled, and all works completed the switchover upon passing the required examinations, which were conducted between September 2002 and February 2003.

Sumitomo Chemical's domestic and overseas affiliated companies are also making active efforts to acquire or renew ISO 9000 series certification. As of March 2003, 21 domestic Group companies and 10 overseas Group companies had acquired ISO 9000 series certification.

Works and		ISO 9002 (1994 version)	ISO 9001 (2000 version)
Certification	Number	Date of Certification	Date of Certification
Ehime Works: J	CQA-0019	October 24, 1994	December 5, 2002
J	CQA-0320	April 6, 1998	March 17, 2003
Chiba Works:	JQA-0829	March 24, 1995	September 20, 2002
Osaka Works:	JQA-0721	December 22, 1994	December 27, 2002
Oita Works:	JQA-1069	December 8, 1995	February 7, 2003
Misawa Works:	JQA-0752	December 28, 1994	December 13, 2002

Research Initiatives Supporting Responsible Care Activities

The promotion of Responsible Care requires a wide range of technical data, covering environmental protection, process safety and disaster prevention, occupational safety and health, and chemical safety, as well as product quality assurance.

Sumitomo Chemical's Responsible Care activities are scientifically supported by two world-class research laboratories equipped with advanced technology capabilities.

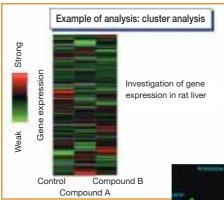
Environmental Health Science Laboratory (EHSL)

The EHSL's primary role is to conduct toxicological evaluations for the various items produced by Sumitomo Chemical Group companies. Sumitomo Chemical invests a considerable portion of research resources into toxicological evaluation research to ensure that its products meet high human health and environmental safety levels. The laboratory is one of the largest institutes in this field in Japan, employs experts in a wide range of fields, and The Environmental Health Science Laboratory has gained considerable know-



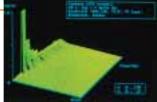
how regarding toxicological evaluations based on its extensive experience. Making full use of the latest scientific knowledge and advanced technologies, the Company's laboratory conducts sophisticated toxicological research in diverse fields, ranging from genetics to ecosystems and the global environment. We are also concentrating on the development of next-generation technologies. Our most significant achievements include mechanistic studies on carcinogenicity based on toxicogenomics research, the establishment of rapid detection systems for dioxin derivatives and endocrine disruptors, and participation in government-led projects.

Furthermore, the EHSL has received GLP (Good Laboratory Practice) certification from the Ministry of Health, Labour and Welfare, the Ministry of Agriculture, Forestry and Fisheries, and the Ministry of the Economy, Trade and Industry. GLP certifica-



Example of analysis: cluster analysis

tion testifies to the reliability of safety trials and research carried out at the EHSL.



Example of environmental fate (simulation of mobility of chemical in soil)

As the core laboratory supporting technological aspects of Responsible Care activities for chemical safety, the EHSL provides toxicological information and the results of risk assessments for each division of the Company and endeavors to ensure safety with regard to human health and the environment throughout our chemical products' entire life cycles, spanning development, use, and disposal. Recently, the laboratory introduced computer simulation models (used in the United States by the Environmental Protection Agency) for assessing the effects of PRTR-targeted substances. These models are being used to create simulations of the air and water concentrations of substances emitted from our factories. Sumitomo Chemical is using this scientific information to ensure that production and environmental management are conducted in a safe manner. In line with Sumitomo Chemical's commitment to ensuring the safety of its operations, the Company is establishing independent management criteria for substances for which environmental standards do not currently exist. These independent criteria conform to the Japanese government's guidelines for establishing environmental standards.

The following is a list of the EHSL's main areas of research.

Tests and research on human health effects

- Acute toxicity, sub-acute toxicity, chronic toxicity, carcinogenicity
- Reproductive toxicity, developmental toxicity
- Irritation, sensitization, mutagenicity
- Pharmacology, toxicokinetics, metabolism
- · Mechanistic studies on toxicity

Tests and research on environmental effects

- Biodegradation, bioaccumulation, persistence in the environment
- Environmental fate (including metabolism in soil)
- Toxicity to environmental organisms (including wildlife)
- Mechanistic studies on environmental effects

Toxicological information surveys and risk assessment on chemical products

- Toxicological evaluation reports
- Prediction of toxicological effects on human health and the environment (using a structure-activity relationship)
- · Risk assessment for workers
- · Risk assessment for consumers
- Risk assessment for the environment

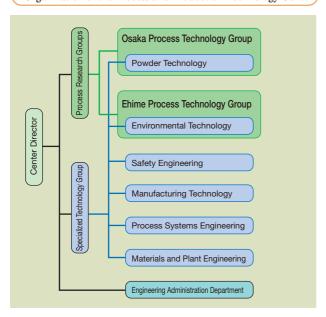
Process & Production Technology Center (PPTC)

The PPTC conducts R&D on process development and innovative production technologies, serving as a bridge between basic research and manufacturing. Thorough study on a rational process is undertaken, using the latest scientific knowledge and production technologies. Then, the basic design and process scheme are established after experimentally operating a pilot plant. Also undertaken is the production of samples required for market development of new products, the strengthening of platform technologies, and safety engineering research to prevent accidents and disasters in factories.

As a provider of support in improving the productivity of the manufacturing divisions and modernizing production systems, the center uses computer simulations to research equipment selection and control, automation of materials handling, sensor technology, and the strengthening of production, fabrication, and assembly process technology.

The center also focuses on the study of wastewater and refuse processing technologies and the cultivation of employees engaged in production technology at manufacturing divisions.

Organization of the Process and Production Technology Center





Organic Synthesis Research Laboratory and Process & Production Technology Center (on the site of the Osaka Works)

Safety Engineering Laboratory

The Safety Engineering Laboratory undertakes the following activities in order to enhance process safety management and prevent such accidents as fires, explosions, etc.

- Studying and assessing process safety, researching safety measures
- · Measuring and evaluating material safety data
- Compiling a database on safety technologies
- Training for safety engineers

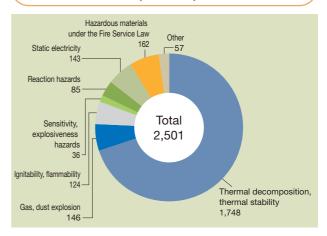
The following is a list of the technologies employed to ensure the safety of our chemical processes.

- 1) Hazard Evaluation Technologies of Chemical Substances The following Hazard Evaluation Tests are conducted to comprehensively evaluate the fire and explosion hazards associated with chemical substances.
- Computational hazard evaluation tests
- Gas, dust explosion evaluation tests
- Thermal decomposition, thermal stability evaluation tests
- Ignitability, flammability evaluation tests
- Sensitivity, explosiveness evaluation tests
- Reaction hazard evaluation tests

- Static electricity evaluation tests
- Classification of a hazardous material under the Fire Service Law

The number of requests for material safety data measurements in 2002 totaled 2,501 cases. The following is a tabulation by hazard evaluation technology. The number of requests for data related to thermal decomposition and thermal stability rose substantially from the previous year.

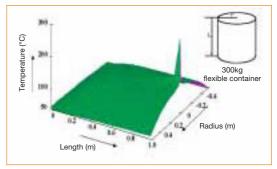
Number of Requests for Material Safety Data Measurements (Fiscal 2002)



2) Applied Safety Technologies for Equipment

The Safety Engineering Laboratory is developing the following technologies using material safety data from hazard evaluation tests of chemical substances to improve the safety of equipment.

- Optimizing reaction conditions
- Static electricity hazard evaluation
- Safety design (vent sizing, suppression of and controls for runaway reactions)
- Scale-up effects (dust explosions, reaction hazards, spontaneous ignition, etc.)
- Consequence analysis for leakage, fires, and explosions



Results of a simulation of the spontaneous ignition of powder inside a flexible container

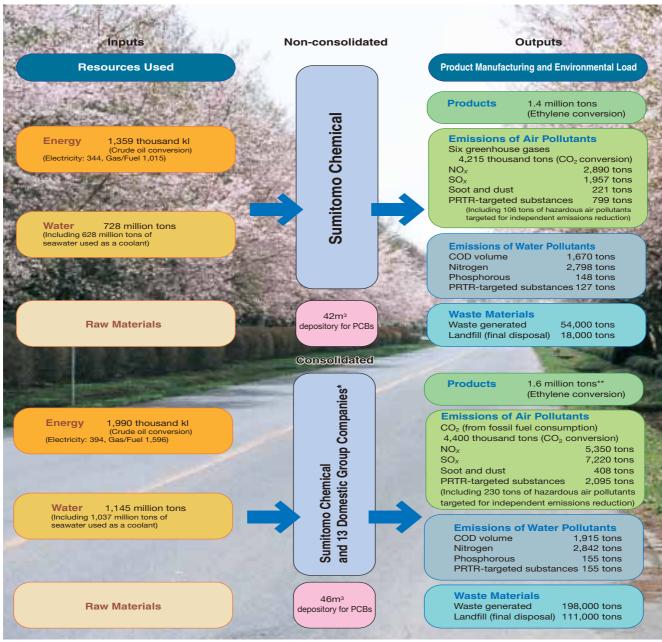
3) Process Hazard Assessment Technologies

To ensure that potential hazards of processes are not overlooked, further study using the following technologies is being conducted.

- Relative hazard assessment
- Hazard and Operability studies (HAZOP)
- Failure Modes and Effects Analysis (FMEA)
- Fault Tree Analysis (FTA)
- Event Tree Analysis (ETA)
- Disaster simulation consequence analysis
- · Risk assessment

Environmental Preservation Activities / Environmental Impact of Production Activities

As a diversified chemical company that manufactures and sells a wide range of products, Sumitomo Chemical has long engaged in environmental activities and is a leader in environmental initiatives in the Japanese chemical industry. The entire Company—from top management to employees—is fully committed to protecting the environment and ensuring the safety of chemical products—key issues at Sumitomo Chemical and an integral part of the Company's management philosophy. Sumitomo Chemical's environmental activities have produced results in a number of areas. As of fiscal 2001, Sumitomo Chemical had reduced emissions of certain hazardous air pollutants, targeted by the JCIA for voluntary reduction, by 70.2% compared with the level in fiscal 1999; reduced emissions of chemical substances; reduced industrial waste; and improved the risk management of chemical substances. Sumitomo Chemical completed overall risk assessments, including human health risk assessments, on all of the primary PRTR-targeted substances. In addition, the Company is aggressively pursuing the proper management of soil contamination, with a view to thorough risk management. Sumitomo Chemical conducted soil contamination surveys at all of its works in line with the independent management policy centered on keeping hazardous materials strictly within Company premises and ensuring careful management of these materials. Starting in fiscal 2002, Sumitomo Chemical gathered consolidated environmental performance data for the Company and its domestic Group companies. Sumitomo Chemical will continue to work toward reducing the Group's environmental impact.



Spring at the Misawa Works

^{*} The 13 domestic Group companies are as follows: Sumitomo Pharmaceuticals Co., Ltd.; Koei Chemical Co., Ltd.; Taoka Chemical Co., Ltd.; Sumitomo Joint Electric Power Co., Ltd.; Sumika Fine Chemicals Co., Ltd.; Sumika Fine Chemicals Co., Ltd.; Sumika Fine Chemical Industry Co., Ltd.; Sumika Fine Chemical Industry Co., Ltd.; Aid New STI Technology, Inc.

^{**} Certain assumptions were made in calculations, due to the difficulty in attaining weight-based figures for some products.

Prevention of Global Warming

In curbing CO_2 emissions through the implementation of thorough energy-saving measures, Sumitomo Chemical is striving to meet the Japan Business Federation's voluntary action target of reducing CO_2 emissions to below fiscal 1990 levels by fiscal 2010.

In fiscal 2002, the parent company released CO_2 emissions totaling 4.019 million tons, a 5% increase compared with fiscal 2001. The increase is attributable to a rise in fossil fuel consumption (fuel consumed plus purchased electricity and steam) stemming from increased production volume. This is a 10% increase compared with fiscal 1990. We will continue to develop energy-saving processes, rationalize processes, and improve operational methods in working toward meeting energy use targets.

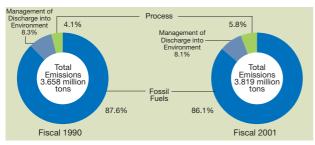
The Sumitomo Chemical Group (Sumitomo Chemical and its 13 domestic subsidiaries) released CO₂ emissions totaling 4.4 million tons (3.47 million tons by Sumitomo Chemical and 0.93 million tons by the 13 Group companies).

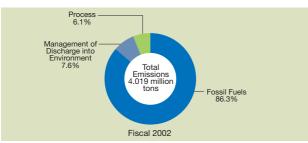
Emissions of Other Greenhouse Gases

Sumitomo Chemical released 4.215 million tons (CO_2 conversion) of six greenhouse gases regulated by the Law Concerning the Promotion of Measures to Cope with Global Warming. CO_2 emissions accounted for 4.019 million tons, and emissions of the other five gases totaled 0.196 million tons. Annual emissions of these five gases have remained steady for several years. Their breakdown is given below.

 N_2O : 0.196 million tons, hydrofluorocarbon (HFC): 0.0002 million tons, perfluorocarbon (PFC): 0.0000 million tons, methane: 0.0001 million tons, sulfur hexafluoride: 0.0000 million tons

Sources of CO₂ Emissions (Non-consolidated)





(Millions of tons)

Fiscal	Total	Fossil Fuels		Management into Env			
Years	Emissions	Fuel Consumption	Purchased Electricity, Steam	Incineration	Wastewater	Process	
1990	365.8	216.9	103.5	28.3	2.2	14.9	
2001	381.9	214.4	114.4	29.2	1.8	22.1	
2002	401.9	223.7	123.2	28.4	2.2	24.4	

Notes: 1. Process refers to production process emissions other than energy consumption.

- Revisions were made to the data for fiscal 1990 and fiscal 2001 to improve accuracy.
- Figures for fuel consumption do not include electricity and steam sold outside the Company.

Energy Saving

Since the first oil shock in the fall of 1973, Sumitomo Chemical has been striving to become an energy-saving manufacturer. By strengthening energy management and actively investing in energy-saving equipment, the Company has been able to achieve significant results.

As one of its top priorities, Sumitomo Chemical has steadily implemented energy-saving measures to prevent global warming and contribute to a recycling-based society, and is aiming to reach its target of improving its energy consumption rate by at least 1% per year. In fiscal 2002, a variety of energy-saving measures produced a 1.1% improvement from the previous year's level in the energy consumption rate.

Assigning fiscal 1990 a value of 100 in the energy consumption index, the fiscal 2002 target was 88.6, compared with the 89.2 actually achieved, for an achievement rate of 94.7%.

The principal energy-saving measures for fiscal 2002 are listed below.

Principal Energy-Saving Measures in Fiscal 2002 (volumes by crude oil conversion)

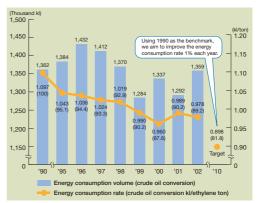
- Convert production processes for polyethylene and polypropylene (6,900 kl/year)
- Improve heat recovery for caprolactam process (3,300 kl/year)
- Expansion of gas turbine cogeneration equipment (3,300 kl/year)
- Rationalization of ethylene process (1,600 kl/year)

We are planning the following measures for fiscal 2003, and through their implementation we expect to improve the energy consumption rate by approximately 1% from the previous fiscal year.

Principal Energy-Saving Measures in Fiscal 2003 (Targets) (volumes by crude oil conversion)

- Improve heat recovery for ethylene (4,900 kl/year)
- Improve heat recovery for BTX (benzene, toluene, and xylene) (3,600 kl/year)
- Improve heat recovery for ethylbenzene (2,600 kl/year)

Energy Consumption Volume and Energy Consumption Rate



Notes: 1. Due to improvements in the accuracy of the data, some figures have been revised.

2. Numerical values appearing inside parentheses are the index values (1990=100).

On-site Audits of Designated Energy Management Factories

From August 2002 to February 2003, all five of the Company's works (First-Class Designated Energy Management Factories under the Energy Conservation Law) underwent audits, conducted by the Bureau of Economy, Trade and Industry and the Energy Conservation Center of Japan, that verified they are appropriately and satisfactorily managed. In the future, we will strengthen our compliance with criteria for businesses (the

Minister of Economy, Trade and Industry's criteria for rational use of energy by businesses) laid out by the Energy Conservation Law.

Pollutant Release and Transfer Register (PRTR)

Since fiscal 1994, Sumitomo Chemical has conducted annual PRTR inspections to track the release and transfer of materials targeted by the Japan Chemical Industry Association (JCIA).

In fiscal 2002, the Company surveyed all 480 chemical substances targeted by the JCIA, including 354 class-one chemicals identified by the PRTR Law.

As a result of these inspections, Sumitomo Chemical found that it produced or used 120 (including 81 substances targeted under the PRTR Law) of the 480 targeted materials. The Company released a total of 1,634 tons of such materials and transferred a total of 595 tons. The amount released declined 11.9% from the previous fiscal year.

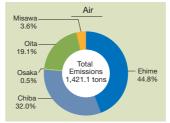
Reporting the Release and Transfer of Targeted Substances under the PRTR Law

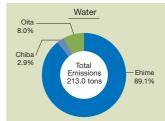
In June 2002, the Company's five works presented reports on fiscal 2001 performance to the relevant ministers. At present, the disclosed PRTR data for fiscal 2001 is being further analyzed by Sumitomo Chemical, and, based on its findings and the results of risk assessments, the Company is deliberating medium- to longterm emissions management targets.

PRTR Database Improvements and Groupwide Dissemination

Sumitomo Chemical made vast improvements in the operation and functions of its PRTR database, enabling faster, more accurate data input and output as well as a search function. In addition, the Company introduced the database at one Group company and is considering further expansion throughout the Group.

Release Volumes by Works (Non-consolidated)





Release and Transfer of PRTR-Targeted Substances in Fiscal 2002

(Tons)

	Amount Released			Amount Transferred			
	Air	Water	Subtotal	Sewerage	Waste	Subtotal	
PRTR-targeted (81 substances) (Non-consolidated)	798.9	127.1	926.0	2.2	409.9	412.1	
PRTR-targeted (Consolidated)	2,094.7	154.9	2,249.6	16.2	3.850.7	3,866.9	
JCIA-targeted (120 substances) (Non-consolidated)	1,421.1	213.0	1,634.1	8.0	586.8	594.8	

Note: Consolidated figures for the release and transfer of PRTR-targeted substances reflect totals for the parent company and its 13 domestic Group companies.

List of PRTR-Targeted Chemicals Released and Transferred in Fiscal 2002 (Non-consolidated)

(Tons2. However, dioxins use mg-TEQ)

PRTR-	JCIA-		Amount Released					Amount Transferred		
Targeted Substances	Targeted Substances	Name of Chemical Compound	Air	Water	Soil (Excl. landfill)	Landfill	Total Amount Released	Sewerage	Waste	Total Amount Transferred
0	0	Vinyl acetate	285.9	0.4	0.0	0.0	286.3	0.0	0.0	0.0
	0	Methyl isobutyl ketone	271.0	0.5	0.0	0.0	271.5	0.0	71.0	71.0
0	0	Toluene	181.3	0.6	0.0	0.0	181.9	< 0.1	28.1	28.1
	0	Cyclohexane	111.3	0.0	0.0	0.0	111.3	0.0	0.0	0.0
0	0	Styrene monomer	80.4	0.0	0.0	0.0	80.4	0.0	0.0	0.0
	0	Methyl alcohol	67.9	0.0	0.0	0.0	67.9	4.8	4.2	9.0
	0	Acetone	57.1	5.9	0.0	0.0	63.0	0.2	0.0	0.2
0	0	Methyl methacrylate	51.4	0.0	0.0	0.0	51.4	0.0	0.0	0.0
0	0	Benzene	42.9	2.8	0.0	0.0	45.7	0.0	0.0	0.0
	0	Hexane	36.0	< 0.1	0.0	0.0	36.0	0.0	0.3	0.3
O	0	Acrylonitrile	27.1	0.0	0.0	0.0	27.1	0.0	0.0	0.0
	0	Triethylamine	17.8	4.3	0.0	0.0	22.1	0.0	0.0	0.0
0	0	Cholorbenzene	15.1	< 0.1	0.0	0.0	15.1	0.0	0.0	0.0
0	0	Epichlorohydrin	13.0	0.4	0.0	0.0	13.4	0.0	0.0	0.0
0	0	Dichloromethane	12.9	< 0.1	0.0	0.0	12.9	0.0	4.1	4.1
	0	Cyclohexanol	12.4	< 0.1	0.0	0.0	12.4	0.0	0.1	0.1
0	0	Vinyl chloride	11.9	0.3	0.0	0.0	12.2	0.0	0.0	0.0
0	0	Xylene	11.3	< 0.1	0.0	0.0	11.3	< 0.1	0.0	< 0.1
	0	Tetrahydrofuran	11.2	0.0	0.0	0.0	11.2	0.0	51.9	51.9
0	0	1, 2-Dichloroethane	10.5	0.0	0.0	0.0	10.5	0.0	264.2	264.2
0	0	ε-Caprolactam	0.3	102.5	0.0	0.0	102.8	0.0	0.0	0.0
	0	Phosphorous and its compounds	0.0	68.3	0.0	0.0	68.3	0.0	0.0	0.0
	0	Butyl alcohol	5.5	1.6	0.0	0.0	7.1	0.0	0.0	0.0
O	0	Chloroethane	2.9	9.2	0.0	0.0	12.1	0.0	0.0	0.0
O	0	Nitrobenzene	0.6	6.4	0.0	0.0	7.0	0.0	0.0	0.0
	0	Adipic acid	1.9	5.3	0.0	0.0	7.2	0.0	0.0	0.0
O	0	1, 4-Dioxane	2.2	0.0	0.0	0.0	2.2	0.8	105.0	105.8
	0	Ethyl acetate	9.4	< 0.1	0.0	0.0	9.4	0.0	48.1	48.1
O	0	Nickel	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3
O	0	Pyridine	2.5	0.0	0.0	0.0	2.5	0.0	2.4	2.4
0	0	Dioxins	(27.5)	(32.8)	(0.0)	(0.0)	(60.3)	(2.0)	(0.7)	(2.7)
		Subtotal of the 31 above-listed substances	1,353.7	208.5	0.0	0.0	1,562.2	5.8	584.7	590.5
		Total 120 substances used by Sumitomo Chemical (FY2002)	1,421.1	213.0	0.0	0.0	1,634.1	8.0	586.8	594.8
		Total 131 substances used by Sumitomo Chemical (FY2001)	1,598.7	256.0	0.0	0.1	1,854.8	24.7	974.4	899.1
		Total 140 substances used by Sumitomo Chemical (FY2000)	1,783.2	129.9	0.0	0.0	1,913.1	71.2	756.9	828.1

Notes: 1. The list covers chemicals with production or use amounts exceeding five tons per year and dioxins, and uses the following standards by which to categorize them.

- · Released into the Air: Amounts exceeding 10 tons
- Transferred as Sewerage: Amounts exceeding 2 tons
- · Discharged into the Water: Amounts exceeding 2 tons • Transferred as Waste: Amounts exceeding 2 tons

- 2. The PRTR Law indicates the use of kilograms (rounded to one decimal point) for expressing weight, but in this report the numerical values are expressed in tons (dioxins use mg-TEQ).
- 3. The fiscal 2001 total of 131 targeted chemicals inspected dropped to 120 in fiscal 2002 as a result of the discontinued use of 11 substances.

Risk Assessments and Management of PRTR-Targeted Substances

At the Environmental Health Science Laboratory and all works, Sumitomo Chemical performed simulations of the density distribution of primary chemical substances emitted, and compared those figures with actual measurements taken within plant premises. These simulation results and actual measurements were then used to assess the risks that these substances pose to human health. These risk assessments were completed in March 2003. The Company is now carrying out the same risk assessments on chemical substances that are emitted in small quantities but require careful management.

Sumitomo Chemical recognizes that it is not sufficient to merely know the volumes permitted by the PRTR Law, and will

continue to monitor the density of chemical emissions onsite at its plants. Sumitomo Chemical plans to enhance its risk communication by actively disclosing data from risk assessments to local residents. Furthermore, the Company is striving to reduce emissions by establishing independent reduction targets.



Toluene environmental criterion Simulation results of toluene emissions into the atmosphere based on the U.S. Industrial Source Complex (ISC) model (Ehime Works)

Prevention of Air and Water Pollution

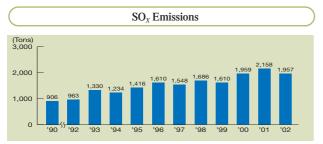
Sumitomo Chemical is committed to reducing the amount of SO_X , NO_X , and soot and dust released into the atmosphere, and the levels of COD, nitrogen and phosphorous released into waterways. In addition, the Company is making efforts to conserve water and preserve both the atmosphere and water resources. In line with this commitment, Sumitomo Chemical has concluded cooperative agreements with municipalities at each of the manufacturing works to encourage the implementation of stricter environmental standards that go beyond the laws and regulations, and is bolstering efforts to reduce emissions.

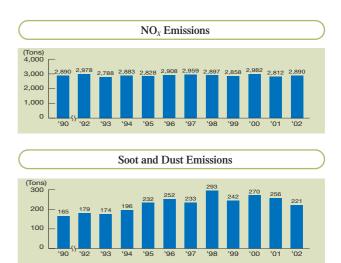
In fiscal 2002, emissions of NO_x , nitrogen, and COD levels were higher than in the previous year as a result of increased production volume. However, these emissions were all at substantially lower levels than those specified in agreements with municipalities.

Responding to the Fifth Set of Water Quality Regulations Limiting Total Pollutant Load

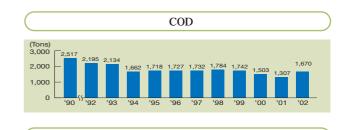
In June 2002, a plan to reduce total volumes of COD as well as nitrogen and phosphorous pollutants was created at the prefectural level. The plan requires that reduction targets and specific reduction measures be set for each point of release. In accordance with the plan, Sumitomo Chemical's works are working with municipalities to establish new regulatory levels for emissions and are considering all possible measures to ensure that

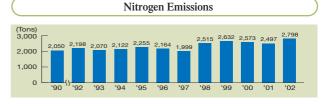
Air Pollutants

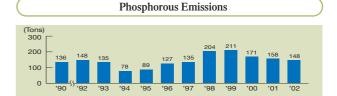


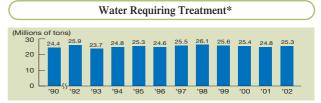


Water Pollutants

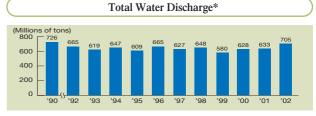








* Water that is released from plants and undergoes activated sludge wastewater treatment, wastewater neutralization, or other treatment



* Including seawater used as a coolant

regulatory levels are met and promote further reduction of the Company's environmental impact.

- Ammonia recovery at the methionine plant, ammonia and phosphorous recovery at the chemical synthesis plant (Ehime Works)
- Improvement of all forms of phosphorous recovery at each plant; improvement of wastewater treatment methods (Oita Works)

Voluntary Control of Hazardous Air Pollutants

The Japanese government has emphasized the need to reduce air pollutants and has attached special importance to 22 substances. Twelve of these substances have been selected by the JCIA for an industry-wide voluntary emission reduction program. Sumitomo Chemical, which currently releases nine of the 12 targeted substances into the environment, is implementing its second emission reduction plan, with the goal of achieving by fiscal 2003 a 75% reduction in emissions compared with the level in fiscal 1999.

In fiscal 2002, overall emissions totaled 105.9 tons for Sumitomo Chemical, a 70.2% reduction from the level in fiscal 1999. Consolidated emissions for Sumitomo Chemical and 13 domestic Group companies amounted to 230.2 tons.

(1) 1, 2-Dichloroethane

This is being used as a solvent in the production of intermediates for pharmaceuticals and agricultural chemicals. Ongoing efforts are being made to completely convert to a replacement substance, and the Company expects one more production line to switch to a different solvent in fiscal 2003. In fiscal 2003, we anticipate an 83% reduction in emissions from fiscal 1999 levels. (2) Benzene

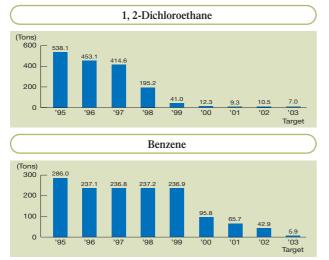
In December 2001, we installed an activated carbon absorption tower in our nitrobenzene production plant to further improve benzene removal. In addition, the installation of an NO_X removing tower in this plant is slated for fiscal 2003. With these measures, in fiscal 2004, we expect to reduce emissions 97.5% from the fiscal 1999 level.

(3) Dichloromethane

In May 2002, we installed an activated carbon absorption tower in our pharmaceutical intermediates production plant. In fiscal 2003, we expect this to lead to an 83% reduction in emissions from fiscal 1999 levels.

(4) Acrylonitrile

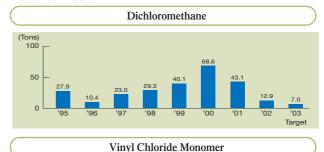
In fiscal 2003, we will take measures to absorb the exhaust gas released from shipment tanks to water, and in fiscal 2004 emissions are expected to be reduced by 34% from the fiscal 1999



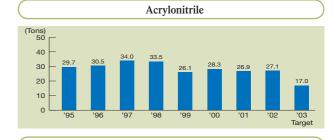
level.

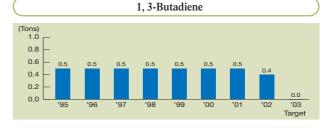
(5) 1, 3-Butadiene

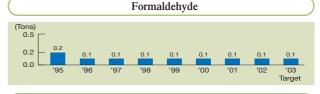
We stopped manufacturing rubber products using this substance in December 2002.

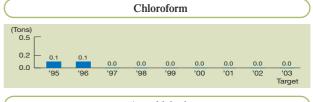


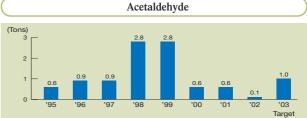












Note: Fiscal 2003 targets were set in fiscal 2000. (Some targets were revised in fiscal 2002.)

Measures to Prevent Soil Contamination

Sumitomo Chemical has long considered soil contamination a top priority among environmental pollution risks, and has conducted soil contamination surveys as well as implemented measures to combat soil contamination. Sumitomo Chemical invested approximately \(\xi\)2.5 billion (posted in environmental accounting figures for fiscal 2001 and fiscal 2002) in non-Company land previously used as a waste disposal facility to recover and incinerate landfill waste, refill the land with mountain soil, and restore the land to an empty lot. Sumitomo Chemical's efforts in this area preempted the implementation of such measures as the Soil Contamination Countermeasures Law and the POPs Treaty. The Company not only strictly adheres to all laws but also takes proactive measures based on voluntary management policies centered on keeping hazardous materials strictly within Company premises and ensuring careful management of these materials, and conducts surveys at all works to assess performance in this area. When ethylene dichloride (EDC) and benzene were used at the Oita Works and the Osaka Works, the Company took extreme care and implemented the requisite measures to ensure that these substances remained within Company premises. Landfill waste containing hexachlorobenzene (HCB)—a POPs Treaty-targeted substance—is present on the premises of the Ehime Works (Kikumoto region). HCB is not currently regulated by environmental standards; however, Sumitomo Chemical has established independent management standards for this substance based on the methods used to establish Japan's environmental standards, to ensure the proper management of HCB. Sumitomo Chemical carefully monitors the activities of regulatory authorities and plans to further enhance its management of chemical substances as necessary.

Sumitomo Chemical will continue to independently and proactively implement measures to prevent soil pollution, addressing it from a risk management perspective as the Company does with air and water pollution.

Reducing Waste

In addition to climate change, pressing concerns include waste materials management, materials recycling, the shortage of landfill sites, illegal dumping, dioxins from incineration facilities, and waste recycling.

- 1) Progress in Reducing, Reusing, and Recycling Waste Sumitomo Chemical is redoubling efforts to reduce, reuse, and recycle waste to achieve its goal of reducing landfill waste in fiscal 2010 by 75% from the fiscal 1990 level.
- Reducing the Amount of Waste Generated

In fiscal 2002, the amount of waste generated was reduced by 75,000 tons from fiscal 2001 by disposing of waste from specified products via the Company's manufacturing processes.

By fiscal 2006, Sumitomo Chemical expects its efforts to attain higher product yields, recover and reuse active substances in wastewater, and improve wastewater treatment methods to result in a more than 4,000-ton reduction in waste compared with the fiscal 2002 level.

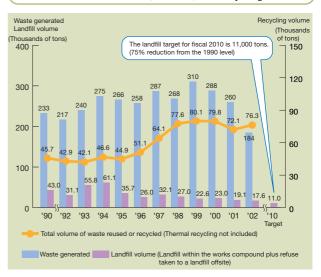
Sumitomo Chemical is also working to reduce sludge generation. In June 2002, the Company created the "Plan to Control the Generation of By-products," which aims by 2006 to reduce the amount of sludge (excluding bauxite residue*) by 20% and the amount of sludge deposited in landfills by 37% compared to the fiscal 2000 levels. The Company submitted this plan to the Japanese government.

• Reusing and Recycling Waste

In fiscal 2002, the amount of waste that was reused or recycled increased by 4,000 tons over fiscal 2001 levels. In particular, Sumitomo Chemical is making substantial headway in its efforts to reuse ash from incinerated sludge as material for cement. Already, 2,200 tons of ash from incinerated sludge generated by the Misawa Works and the Oita Works have been used as material for cement. Additionally, in fiscal 2002, 500 tons of ash from incinerated sludge generated by the Chiba Works were reused.

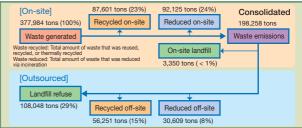
By fiscal 2006, Sumitomo Chemical intends to raise the amount of this ash used as material for cement by 3-4 thousand tons from the fiscal 2002 level.

Trends in Waste Generated, Landfill, and Recycling Volumes



Waste Disposal Flow Chart and Results (Fiscal 2002)





* Bauxite residue

Red bauxite, which is natural bauxite from which the aluminum has been extracted, exists in nature and is composed of mineral constituents and saltwater.

Sumitomo Chemical is conducting sea-dumping disposal, which is permitted by Japanese domestic law based on the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention). At present, the Company has not yet established an adequate usage method allow for practical application, and this is also due to the large restraints on landfill dumping. As for seadumping disposal, analytical tests recognized by law have proven such a method of disposal to be safe.

The Company will continue to study ways to reduce the amount disposed through sea-dumping, while promoting both a reduction in the amount of red bauxite generated and effective uses of the substance. Sumitomo Chemical is also conducting an environmental impact analysis of the ocean in cooperation with other companies in the chemical industry and plans to announce the details of these industry efforts at the London Convention Scientific Conference.

· Reducing Landfill Waste

Owing to measures to reduce, reuse, and recycle waste, landfill waste in fiscal 2002 totaled 17,635 tons. This represents a 1,500-ton (7.7%) decrease from the fiscal 2001 level.

By fiscal 2006, Sumitomo Chemical aims to reduce landfill waste by more than 6,000 tons from the fiscal 2002 level. The Company thus expects to achieve its goal of reducing landfill waste in fiscal 2010 by 75% from the fiscal 1990 level four years ahead of schedule.

2) Measures to Prevent Illegal Dumping

Sumitomo Chemical is committed to preventing illegal dumping, and is bolstering its manifest management and inspections of the landfill operations that the Company commissions to handle offsite waste disposal.

Reducing Dioxin Emissions

1) Dioxin Emission Countermeasures for Incineration Facilities In accordance with Japan's Waste Management and Public Cleansing Law, regulations were tightened on the concentration of dioxins in exhaust gas from waste incinerators, and new regulations on CO concentrations went into effect as of December 2002.

During fiscal 2001 and fiscal 2002, Sumitomo Chemical made the following renovations to its waste incinerators to ensure regulatory compliance.

- Fluid bed incinerator (Ehime Works): construction for oxygen enrichment and incineration stability
- Rotary kiln (Ehime Works): installed temperature controls for the deodorizing furnace
- Rotary kiln (Osaka Works): removed this kiln
- Fluid bed incinerator (Chiba Works): installed a cooling tower and equipment to pump activated charcoal into the incinerator
- 2) Increasing Controls at Facilities Subject to Effluent Standards In August 2002, the nitration reaction facilities, redox reaction facilities, postcyclization product cleaning facilities, and product drying facilities at the manufacturing plant for the organic pigment dioxazine violet at the Ehime Works were designated as facilities subject to effluent standards under the Law Concerning Special Measures against Dioxins.

Sumitomo Chemical will properly treat and purify effluents from these facilities at the Company's wastewater treatment facilities to reduce the concentration of dioxins in wastewater discharged into public waters to a level that is completely harmless.

PCB Recovery, Storage, and Treatment

In accordance with the Law Concerning Special Measures against PCB Waste, Sumitomo Chemical is making a systematic effort to recover and store PCBs from such devices as capacitors and transformers.

Treatment of stored PCBs is to be undertaken by the Japanese government's Japan Environment Corporation, which is preparing for the start-up of PCB waste treatment operations. Sumitomo Chemical will respond accordingly.

As industrial waste subject to special control, devices containing PCBs are stored in specified areas within the Company's waste storage facilities to ensure strict control and appropriate handling.

	Number of PCB Containers	Total PCB Volume (m³)
Non- consolidated	749	42.1
Non- conso	(Stored 706, in use 43)	
Consolidated	968	45.5
Comso	(Stored 915, in use 53)	

Figures do not include the ballasts in fluorescent lights or mercury lamps. Consolidated data reflect the aggregate results of Sumitomo Chemical and 13 of its domestic Group companies.

Management of Specific Chlorofluorocarbons (CFCs)

Sumitomo Chemical currently uses specific CFCs such as trichlorofluoromethane (CFC-11) and dichlorodifluoromethane (CFC-12), which are highly destructive to the ozone layer, in cooling devices. However, the Company is conducting systematic replacements by switching over to hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs). In fiscal 2002, we replaced three cooling devices. We will continue the switchover to CFC substitutes as we systematically replace our cooling devices.

Life Cycle Assessments (LCAs)

To participate in our customers' product LCAs and also to provide support for national projects led by the Ministry of Economy, Trade and Industry, a detailed compilation of LCA inventory data for materials used in Sumitomo Chemical's products is being undertaken. In the future, further expansion of the scope of data is planned.

Sumitomo Chemical is also working to find practical applications for product LCAs. The Company is conducting surveys, organizing issues, and moving forward with other basic research to establish economic indicators for product LCAs so that they can be used as an important decision-making tool in the product development stage.

Green Procurement

1) Meeting Customers' Green Procurement Needs

The automotive and electronics industries are at the core of efforts to reduce the amount of harmful substances in products and design products that can easily be recycled. As a supplier of raw materials, Sumitomo Chemical is proactively working to assist customers in the creation of green products and to meet customers' green procurement needs.

2) Green Procurement at Sumitomo Chemical

Sumitomo Chemical is actively promoting green purchasing (giving priority to products with lower environmental impact) in ordering office supplies and office equipment.

As a chemical company that supplies raw materials, a large portion of the materials that Sumitomo Chemical procures are naphthas and other naturally derived materials, which makes it difficult to practice green procurement. However, Sumitomo Chemical is working to establish a green procurement plan that is suitable for a chemical company.

Sustainable Management Rating Participation (Fiscal 2002)

Sumitomo Chemical participated in the First Sustainable Management Rating held by the Rating Institute for Sustainable Management (SMRI) and was ranked a "Green Top Runner." Sumitomo Chemical holds in high esteem the purpose and intentions of such sustainable management assessments, and will endeavor to further increase the credibility of the Company's sustainable management and its commitment to environmental preservation, as well as to society, culture, and ethics, to promote the creation of a sustainable society.

Note: Green Top Runner refers to a company that participated in the SMRI's Sustainable Management Rating program, received outstanding sustainable management evaluations, and agreed to have its company name published.

Promoting the "3Rs"

As part of increased efforts to incorporate the 3Rs—Reduce, Reuse, and Recycle—into every aspect of its operations, Sumitomo Chemical is actively participating in industry initiatives led by the JCIA. An example of industry organization activities was the "Technology Development for Zero-Emission Recycling of Chemicals from Used Plastic from Electronics and Automobiles" initiative held by the Plastic Waste Management Institute in fiscal 2002.

Environmental Accounting

In line with its environmental accounting program, which was introduced in fiscal 2000, Sumitomo Chemical is continuously gathering and evaluating data on environment-related expenses, investments, and economic results.

[Environmental Accounting Objectives]

- 1) Improve environmental protection efficiency by numerically analyzing environmental activities
- 2) Decision making based on a long-term environmental perspective
- 3) Improve enterprise transparency through the disclosure of information

[Items Related to Environmental Accounting]

- 1) Scope: Sumitomo Chemical and 16 domestic and overseas Group companies
- 2) Period under review: Fiscal 2002 (April 1, 2002, to March 31, 2003)
- 3) Classification: Ministry of Environment guidelines are followed in principle
- 4) Independent review: A review is conducted by Asahi & Co.
- 5) Tabulations are made on a consolidated basis: Principal 16

consolidated affiliates (13 domestic, 3 overseas)

[Environmental Accounting Results]

In comparison to fiscal 2001, investments rose ¥1.4 billion, and expenses fell ¥700 million. Environmental damage costs—soil surveys and clean-up expenses—declined ¥200 million from the level in fiscal 2001.

Meanwhile, the economic effects from energy conservation and resource conservation decreased \(\frac{4}{2}00\) million and \(\frac{4}{4}00\) million, respectively, from fiscal 2001 levels, and expense reductions due to recycling activities increased by \(\frac{4}{1}00\) million. Consequently, total economic benefits decreased \(\frac{4}{6}00\) million.

Environmental Costs (Billions of yen)

				Fisca	1 2002			Fiscal	2001	
	Classification Main Implementation Parent Onl			Parent Only Consolidated		idated	Parent Only		Consolidated	
			Investment	Expense	Investment	Expense	Investment	Expense	Investment	Expense
В	usiness Area Costs		2.4	8.6	3.0	13.5	0.7	8.7	1.3	12.7
u.	Pollution Prevention Costs	Prevention of air pollution, water pollution, soil contamination, noise pollution, odors, ground sinkage, etc.	(1.3)	(5.4)	(1.7)	(8.2)	(0.3)	(5.4)	(0.7)	(8.4)
Breakdown	Global Environment Costs	Prevention of global warming, ozone layer destruction, etc.	(0.2)	(0.4)	(0.2)	(0.5)	(0.1)	(0.4)	(0.1)	(0.4)
Bre	Resource Circulation Costs	Resource and energy conservation, saving water and using rainwater, reducing and disposing of waste, recycling waste, etc.	(1.0)	(2.8)	(1.1)	(4.8)	(0.3)	(2.9)	(0.5)	(3.9)
Uį	o/Downstream Costs	Green purchasing, recycling and recovery procedures for products, remaking into products, undertaking appropriate treatments, recycling costs associated with containers and packaging, environment-friendly products and services	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1
	anagement ctivity Costs	Costs associated with environmental education, environmental management systems, and monitoring and measuring the environmental impact of business activities and products; environmental organization operation	0.0	0.5	0.0	0.8	0.0	0.6	0.0	0.8
R	&D Costs	Development of products contributing to environmental protection, research of energy-conservation processes	0.4	2.7	0.4	2.9	0.8	3.1	0.8	3.2
So	cial Activity Costs	Environmental policies relating to protecting the natural environment and enhancing its scenic beauty and greenery, supporting community initiatives aimed at environmental protection, supporting environmental conservation groups, environment-related paid contributions and surcharges	0.1	0.5	0.1	0.9	0.0	0.5	0.0	0.9
	vironmental amage Costs	Environmental rehabilitation of contaminated environments and other environmental damage	0.0	1.4	0.0	1.4	0.0	1.6	0.0	1.6
	Total		2.9	13.8	3.5	19.6	1.5	14.5	2.2	19.3

Economic Effects (Billions of yen) Fiscal 2002 Fiscal 2001 Results Parent Con-Parent Consolidated solidated Expense reductions due to energy conservation 0.3 0.5 0.6 0.6 0.8 1.0 1.0 Expense reductions due to resource conservation 1.4 1.7 1.3 Expense reductions due to recycling activities 1.6 2.9

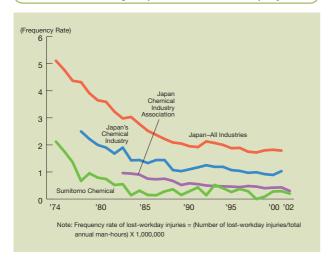
Occupational Health and Safety

Sumitomo Chemical is implementing a variety of initiatives under the basic philosophy "Putting Safety First and Foremost."

Safety Performance

There were two accidents that resulted in lost workdays in fiscal 2002. Regrettably, Sumitomo Chemical was unable to achieve its target of zero accidents. The frequency rate of lost-workday injuries was 0.20, which is an improvement from last year's rate of 0.29.

Trends in the Frequency Rate of Lost-Workday Injuries



Safety-Oriented Corporate Culture

■ Moving from Zero Accidents to Zero Dangers

To shift our thinking and actions from zero accidents to zero dangers, various guidelines have been devised and training is being conducted for all Sumitomo Chemical employees. These guidelines, posted on the Company's intranet and available for all to see at any time, are also being used by Sumitomo Chemical Group companies.

- Guidelines for preventing accidents involving getting caught or entangled in machinery (April 1998)
- Guidelines for preventing accidents involving human error (April 2002)
- Guidelines for site-specific risk assessments (July 2002)

■ Accident Prevention through Case Studies

All information pertaining to accidents that happen at each works or laboratory has been made available companywide as part of efforts to ensure that similar accidents do not happen. Regarding more severe accidents, we undertake a companywide "Zero Accident Patrol" to prevent a recurrence of similar accidents. Information is also provided to Sumitomo Chemical Group companies to raise awareness regarding accident prevention.

Examination of Previous Accidents

A variety of committees, such as the Works Managers' Committee, the Environmental Health and Safety Supervisors' Committee, and the Safety Guidance Research Committee, are convened periodically to publicize the details of previous accidents to prevent similar accidents from occurring.

Safety Award System

The President's Safety Award system has been established to honor the employees at our works and research laboratories, as well as employees of contractor companies that operate within our compounds. This award acknowledges individual facilities for their superior efforts concerning safety activities.

Thanks to these various measures, accidents, viewed over the long term, are on the decline. However, the Company's target of zero accidents has yet to be achieved, and a variety of activities are being conducted to realize this goal.

Occupational Safety and Health Management System (OSHMS)

OSHMS is a mechanism that goes through the PDCA (Plan-Do-Check-Act) cycle and voluntarily and continuously conducts occupational health and safety management. This system aims to minimize the potential risks of work-related accidents at each plant, promote improved health for workers, ensure a comfortable working environment, and contribute to improved safety and health standards.

OSHMS was introduced at the Chiba Works in April 2001, and in December 2002 this works underwent evaluation for

OSHMS certification from the Japan Industrial Safety and Health Association (JISHA). In May 2003, nine companies in Japan received OSHMS certification from JISHA, including



the Chiba Works—the first plant in Chiba Prefecture to receive certification.

In addition, OSHMS was introduced at the Ehime Works and Osaka Works in April 2002 and July 2002, respectively. In April 2003, OSHMS came into operation at remaining plants and research facilities.

Actively Promoting Good Health

At Sumitomo Chemical, health checkups are conducted periodically, following a list drawn up voluntarily, to encourage employees to actively promote good health. Using checkup results, a physician provides private consultations at each works and research laboratory, and the Company sponsors various activities that include walking, hiking, mountain climbing, and golf.

By implementing OSHMS and other initiatives, Sumitomo Chemical strives to ensure even higher standards of occupational health and safety.



Hiking (Oita Works)

Process Safety and Disaster Prevention Management

The foremost task in accident and disaster prevention management is to establish safe processes that have undergone structured safety evaluation so as to prevent accidents and disasters. To this end, Sumitomo Chemical has introduced the thorough implementation of process hazard analyses and self-regulated safety management beyond legal requirements.

Process Safety Management

Sumitomo Chemical undertakes safety assessments at each stage of development, from process R&D to plant design, construction, operation, maintenance, and dismantling, in an effort to reduce the environmental burden and achieve zero-accident and zero-injury operations.

1) Management of Process Hazard Analysis

The Process Safety Review Committee convenes at every stage of the R&D and commercialization processes to deliberate process hazard assessments as stipulated by Process Development and Commercialization Regulations and Safety Management Guidelines. This committee is run by the people responsible at each stage of the process: for example, at the R&D stage, the person who heads the laboratory; and from the commercialization stage, the plant's environment and safety director. As shown in the diagram below, in both the R&D and commercialization stages, nothing is forwarded to the next stage unless it has been proven to satisfy safety requirements.

Prior to Process Safety Review Committee meetings, safety data on the substances being used in a particular project are gathered, and process hazard assessments are made based on this scientific data. For new substances, intermediaries, and other substances for which prior data are not available, the Safety Engineering Laboratory collects data samples and conducts hazard assessments

In addition, Sumitomo Chemical's safety management policies require that periodic process hazard assessments be conducted after the commencement of operations as well as when changes are implemented, as part of efforts to identify potential hazards and enhance safety levels.

Risk Assessment from R&D to Commercialization

From R&D Stage Preliminary Meeting Process Safety Review Committee Level Three Process Safety Review Approval Committee Level One for Commercialization Experiment Planning Meeting Plant Design/Construction Experiment by Operating Pilot Plants Process Safety Review Committee Level Four Pre-Start-up Safety Review/ Approval for Production Process Safety Review Test/Commercial Manufacture Experiment Results Confirmation Meeting Process Safety Review Committee Level Five Proceed to Study on Commercialization

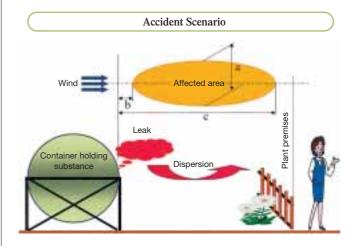
Commercialization Stage

2) Measures to Prevent Toxic Substance Related Accidents

Whenever a large amount of a toxic substance is leaked, there is the potential that a major accident will occur. Thus, plants are located a safe distance from residential areas as required by Japanese law. For the past several years, Sumitomo Chemical has compiled, making reference to the standards of the U.S. Risk Management Program (RMP) Rule, a list of toxic substances that are handled at existing plants, and conducted simulations of potential accidents related to these substances to further reinforce the safety of its operations.

As depicted in the illustration below, accident scenarios first calculate the leak rate of the substance by taking into account such factors as the properties and handling conditions of the substance and the size of the hole from which the substance leaks. Then, such variables as wind speed are added to the equation, and the area affected by the leak is calculated. End-point values used in the RMP Rule are used to determine the affected area.

By conducting simulations of potential accidents, Sumitomo Chemical will pinpoint any processes that have the potential to adversely affect areas outside plant premises and step up safety measures to ensure the safety of these processes.



Voluntary Safety Controls with High Standards

Sumitomo Chemical is proactively promoting environment and safety initiatives. The Company practices self-regulation to reduce environmental impact and achieve zero accidents and zero injuries. Furthermore, to ensure a higher level of compliance with these initiatives, the following management systems and support tools have been introduced.

1) Process & Production Technology Center

The Process & Production Technology Center, which includes the Safety Engineering Laboratory and the Materials and Plant Engineering Group, supports process safety and disaster prevention management. (For details, see pages 11–12.)

2) Process Safety Advisors

Sumitomo Chemical employs a group of process safety advisors to support the Company's process safety management. Staff with specialized knowledge and experience in this area are selected by the Responsible Care Committee Chairman to serve as process safety advisors. Presently, 11 process safety advisors oversee the following six areas: control of process hazards, control of substance hazards, explosions and fires, static electricity, Distributed Control Systems (DCSs), and process safety and disaster prevention assessments. These advisors' Companywide efforts include participation in the Process Safety Review Committee and internal Responsible Care audits (safety audits).

3) Safety and Disaster Prevention Guidelines

Safety management criteria have been stipulated in the Safety Management Procedures regarding the content of process hazard assessments, which are conducted at every stage. To ensure the adequate implementation of process hazard assessments, the Company has compiled safety and disaster prevention guidelines, which are used not only as educational materials but also as a guidebook for conducting the assessments.

- ① Guidelines for applying disaster prevention assessments
- ② Guidelines on safety countermeasures for static electricity
- 3 Guidelines on chemical compatibility
- 4 Guidelines for chemical process safety
- 5 Chemical plant safety checklist
- 6 DCS safety checklist

The safety and disaster prevention guidelines are distributed to each section (or office), and all but the guidelines on chemical compatibility have been made available as electronic files on the Company's intranet and can be accessed from anywhere in the Company.



Safety and disaster prevention guidelines

In fiscal 2002, we began work on a revised edition of the guidelines for applying disaster prevention assessments. Sumitomo Chemical is considering adding such risk assessment methods as Quantitative Risk Analysis (QRA) and Layer of Protection Analysis (LOPA) to its safety assessment guidelines.

4) Risk Assessment Software

Sumitomo Chemical has installed the U.S.-based SAFER Systems, L.L.C.'s software Real-Time—an integrated impact evaluation system—at the Ehime Works. The program reads real-time meteorological data from equipment positioned in the vicinity of the plant, integrates that data with a map of the area, and can then use that information to project the amount of the substance emitted from the point of release, which facilities are impacted, and other factors. The software can be used to create chemical disaster simulations, in which safety measures can be evaluated for effectiveness and the optimal placement of facilities determined. Real-Time is also a powerful tool in minimizing damage after a chemical accident has occurred and in improving emergency response. The Company is working to upgrade its systems so that this program can be used at other works in the future.

5) Information Systems and Databases

Conducting process hazard assessments necessitates the use of many kinds of safety data and accident-related data. Sumitomo Chemical has created the following databases and operates an information system that makes this data accessible from any terminal connected to the Company intranet.

① Process Safety-Related Data (Information on accidents, accident investigation reports, technical information on accident prevention)

Accident- and process safety-related data in the public domain are obtained from domestic and foreign sources, and a summary is prepared. This information is then input into a database. As of March 2003, process safety-related entries exceeded 13,500 items. After conducting a search for a summary from anywhere within the works or laboratory, the original full report can be located and the document can be requested of the library.

- Technical information on accident/disaster prevention: 9,983 entries
- Accident investigation reports/results: 1,554 entries

• Information on accidents: 13,522 entries

This process safety-related data is used in process hazard assessments and case studies to prevent the occurrence of similar accidents. Accident-related information is also made available to external parties through our affiliated companies.

2 Chemical Compatibility Data

When two or more types of chemical substances come into contact, there is always the possibility that the resultant blend will pose more danger than the original substances. A chemical plant uses a variety of chemicals, and caution is imperative in their handling to ensure that dangerous properties do not arise by mixing different chemicals.

This database includes public domain data that have appeared in published documents, as well as the Company's own assessment data. When implementing process changes or process hazard assessments, this database is utilized in the preliminary search for hazard data on mixing and blending chemical substances for a given process.

Voluntary Process Safety Management for High-Pressure Gas Facilities

A total of 29 of Sumitomo Chemical's facilities have acquired the qualification of Approved Operator for Safety Self-Inspection, in adherence to the High-Pressure Gas Safety Law, and conduct safe and stable operations. The Chiba Works obtained this certification early, and the works continually renews its registration. In fiscal 2002, seven plants at the Ehime Works (Kikumoto region) acquired the certification.

Through this certification system, the Company's superior levels of technology and management are recognized, and hence, the implementation of safety self-inspections in lieu of a competent authority's safety inspections has been approved. The ministerial authorization process involves a preliminary audit by an inspection team, comprised of academics and other experts. The above mentioned voluntary process safety management measures have been given high marks in audits.

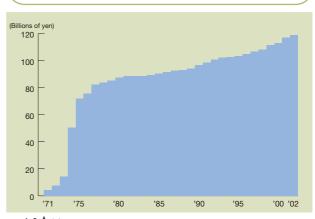
Works	District Name	Certification Date	No. of Facilities Certificated
Ehime	Niihama	Feb. 2002	1
Elline	Kikumoto	Mar. 2003	7
Chile -	Anesaki	May 1999	8
Chiba	Sodegaura	Sept. 1999	13

Environmental and Safety-Related Investments

In fiscal 2002, Sumitomo Chemical's safety-related investments amounted to ¥1.4 billion.

Sumitomo Chemical's cumulative environmental and safety-related investments for fiscal 1971 to fiscal 2002 totaled ¥118.8 billion—73% of which was environment-related and 27% of which was safety-related.

Cumulative Environmental and Safety-Related Investments Since 1971



Chemical Safety Activities

Chemical Safety Management

Sumitomo Chemical has been improving chemical safety management through its Toxicity Assessment System for Chemical Substances (TASCS), which was set up to compile safety information and promote risk assessment related to chemical substances.

Safety Data on Chemical Substances

To facilitate and expedite the transfer of information within the Company, the compiled and analyzed data on products, intermediates, and raw materials are stored in a product safety database called CHEMSAFE2. In fiscal 2002, 158 new items of data were entered into the database, bringing the total number of entries to 3,005. It is also used as the database for Material Safety Data Sheets (MSDSs) to provide safety information to customers and ensure the safety of both the workplace and community.

An Overview of CHEMSAFE2 Data

- 1. Substance-related data
- 2. Laws and regulations
- 3. Data on physical and chemical properties
- 4. Hazards posed by fires and explosions
- 5. Dangers relating to the cracking of chemical compounds
- 6. Dangers of chemical reactions
- 7. Details regarding chemical handling

Fire-fighting agents, fire-fighting techniques, emergency measures, steps to be taken in event of leakages, exposure-prevention measures (equipment countermeasures, protective equipment), and precautions regarding handling, storage, transportation, and disposal

- 8. Health considerations
- 9. Environmental impact
- 10. Data entry, renewal, and data confirmation log
- 11. Manufacturers' data
- 12. List of citation

Material Safety Data Sheets (MSDSs)

Making MSDSs available became required by the Industrial Safety and Health Law in 2000, and again in 2001 per the PRTR Law and Poisonous and Deleterious Substances Control Law. Sumitomo Chemical creates and distributes MSDSs to concerned parties for a variety of chemical substances, not only substances designated by law. Presently, MSDSs are prepared following JCIA guidelines; however, we are in the process of switching over to a JIS format.

$ICCA\ Program\ Concerning\ High\ Production\ Volume\ (HPV)\ Chemicals$

At the October 1998 general meeting of the International

Council of Chemical Associations (ICCA), in order to help the Organization for Economic Cooperation and Development (OECD) HPV program, the industry as a whole created a working list (a priority substances list) of 1,000 HPV chemicals and formally decided to collect hazard data and voluntarily arrange for OECD experts to conduct assessments of these data by 2004.

Of Sumitomo Chemical's 25 HPV substances, the Company has announced that it will assume a leadership role for three substances. In January 2001, the Company participated in what was the industry's first OECD assessment conference, and Sumitomo Chemical's substances underwent an assessment. We made our second submission in October 2002 and received a positive evaluation. This work is being continued through active participation in this program as a member of the chemical industry consortium and also as a sponsor.

Participation and Support for the Long-Range Research Initiative (LRI)

The ICCA is promoting, through its LRI program, responses to unresolved problems concerning chemical safety, such as the issue of endocrine disrupters, as well as the development of safety assessment technologies.

The JCIA is promoting activities with both the European and American chemical industry associations, and Sumitomo Chemical is also an active participant and supporter of the LRI program.



LRI Research Fields (JCIA)

Product Quality Assurance Activities

Sumitomo Chemical has set conduct guidelines that assure product safety and quality as well as prompt, reliable product delivery, and made these specific objectives and priorities known to all business divisions and all employees through the issuance of the Company's "Corporate Policy on Product Quality, Safety and the Environment."

As part of the responsibilities of top management, the Company established the Responsible Care Committee, which systematically undertakes various activities.

Measures to Promote Customer Satisfaction

Sumitomo Chemical's quality assurance efforts, which were based on the ISO 9002 quality management system, have brought about a steady decline in customer complaints year after year. To further increase customer satisfaction, Sumitomo

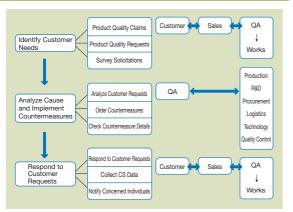
Chemical shored up its quality management system by upgrading ISO certification at all works—from ISO 9002 (1994 version) to ISO 9001 (2000 version).

With the aim of enhancing customer satisfaction even more, Sumitomo Chemical has switched from a paper-based to an electronic system to process customer complaints and requests more quickly and effectively. As a result, the Company has been able to incorporate customers' feedback more fully in its quality assurance activities.

Product Quality Audits by Customers

In fiscal 2002, Sumitomo Chemical underwent 50 audits by its customers. The Company received passing marks for product quality management and assurance and is working to bring its quality management to an even higher level.

Customer Quality Information Flowchart



Notes: 1. CS data refers to data indicating customers' level of satisfaction with the Company.

2. QA: Works Quality Assurance Division

Product Safety Measures

Ensuring the safety of the products we supply to our customers is one of the Company's top priorities; Sumitomo Chemical

recognizes that it is also an essential part of corporate social responsibility as well as being vitally important to the operation of a sound business.

Even before the introduction of the Product Liability Law, Sumitomo Chemical, recognizing the importance of product safety activities, promoted the systematic implementation of measures to ensure product safety through activities such as product development, production, and sales.

The Company places special importance on implementation of the following measures.

- Maintaining up-to-date Company regulations that ensure systematic implementation of product safety activities
- Education that communicates the importance of product safety activities and how to carry out such activities
- Providing customers with product manuals, warning labels, and MSDSs to ensure the safe handling of products
- Risk assessments and reduction measures for new products, taking into consideration the impact on human health and the environment as well as accident prevention
- Quality controls sufficient to ensure safety
- Participation in the industry's product safety activities

Safety in Logistics Operations

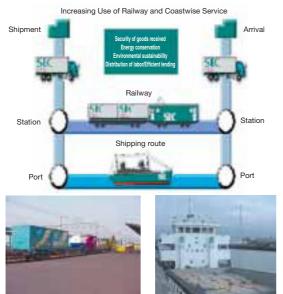
Under the motto "Putting Safety First and Foremost," the Logistics Division has devised Division Policies for Responsible Care Activities and Product Quality Control. The division as a whole, including concerned logistics companies, is engaged in activities related to safety and the environment as well as quality control. Specific measures implemented by the division are as follows.

1. Safety Measures during Transport

- Devise transportation safety rules and standards to be implemented in close cooperation with shipping companies
- Thoroughly inform shipping companies on relevant laws and regulations using a database of laws and regulations
- The Sumika Logistics Council strives to share know-how among shipping companies and improve management.

2. Preparing Emergency Procedures for Responding to Accidents

• Establish a widespread regional rescue system between works



Product shipments at the Ehime Works (Sumika Logistics (West) Co., Ltd.)

- Implement emergency drills with shipping companies
- Make sure that Yellow Cards (instruction cards for emergency response) are being carried by personnel as required

3. Environmental Safety Considerations for Transportation

- Increase the percentage of shipments made in bulk/large vessels
- Promote a modal-shift to railways and ocean shipping
- Provide solid leadership and guidance to logistics companies in complying with diesel exhaust regulations

4. Improving Controls on Logistics Quality

• Promote the acquisition of ISO 9001 certification

Sumika Logistics (West) Co., Ltd., acquired ISO 9001 certification in June 2001, and Sumika Logistics (East) Co., Ltd. in June 2002.

Sumitomo Chemical is developing logistics systems for reduced environmental impact by efficiently sharing shipping resources with other companies, using flexible containers, standardizing pallets, and recycling other packaging materials.

Information System for Environment-Related Laws and Regulations

Sumitomo Chemical has established a system to ensure that its shipping companies are complying with the laws and regulations governing the handling of chemical products. The system automatically notifies the shipping companies of all pertinent laws and ordinances by printing them on invoices, shipping orders, bills of clearance, and other receipts.

The Sumika Logistics Council

The Sumika Logistics Council is comprised of the 34 Japanese shipping companies with which Sumitomo Chemical conducts the most business. The council maintains a nationwide network, with regional meetings convened in nine regions. Various activities aimed at ensuring logistics-related health and safety considerations, environmental safety, and the quality of logistics are being promoted jointly by all the council's corporate members, who are striving to share know-how and improve management.

Audit Results

In fiscal 2002, the Company conducted audits at four works (including some laboratories within the works compounds), one distribution center, five business divisions, and ten facilities of its domestic and overseas Group affiliates. The second round of audits of 35 domestic Group companies began in fiscal 2002.

Past Four Years' Responsible Care Audit Results

	Facilities	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002
	Works*	5	4	5	4
Audits	Laboratories	0	2	1	0
Auc	Distribution Centers	0	0	0	1
EH&S	Business Divisions	4	4	4	5
EH	Group Companies (Japan)	5	22	16	9
	Group Companies (Overseas)	0	0	2	1
Management Audits	Works and Laboratories	5	6	6	5

^{*} Including laboratories within works compounds

Responsible Care Audit Results

Having now completed its eighth round of Responsible Care audits, Sumitomo Chemical is pleased to report that there are increasingly fewer areas for improvement being pointed out and many more mentions of the excellent initiatives being undertaken.

Fiscal 2002 Environment, Health & Safety Audits

Facilities	Good	Needs Improvement	Needs to be Examined
4 Works, 1 Distribution Center	174	58	90
5 Business Divisions	30	47	25

It has been a relatively short time since the introduction of Responsible Care measures at Group companies, and the Sumitomo Chemical Responsible Care audits showed that a portion of these companies and plants were still in the systemcreation phase.

On the other hand, some companies and plants are making the shift to worldwide standards, having obtained ISO 9002 and ISO 14001 certification and GMP compliance. Consequently, in terms of the progress being made by Group affiliates, a substantial gap can be seen among the companies. In the future, the companies and facilities that were slow to introduce the Responsible Care system are expected to realize rapid progress, as a result of their own efforts and with Sumitomo Chemical's support.

Contributing to Responsible Care Activities in the Chemical Industry

As a member of the global chemical industry, Sumitomo Chemical is actively undertaking Responsible Care activities and contributing to the advancement of Japan's chemical industry through the JCIA and numerous other chemical industry-affiliated associations and groups.

Sumitomo Chemical is also engaged in research on chemical product safety through such international forums as the ICCA and the OECD.

Awards

Fiscal 2002 Awards

May 22 JCIA's Recognition of a Zero Accidents Facility
(Ehime Works, Misawa Works, Tsukuba Research
Laboratory, Organic Synthesis Research Laboratory,
Takarazuka Research Laboratory, Environmental
Health Science Laboratory)

June 6 Japan Phosphatic & Compound Fertilizers Manufacturer Association's Occupational Safety Award for 2002 (Sumika Agrotech Co., Ltd., Ehime Fertilizer Works)

 July 11 Japan Soda Industry Association's Special Award for Zero Accidents (30 Years)
 (Ehime Works, Oe and Kikumoto Division 1-1)

Oct. 1 Health, Labour and Welfare Minister's Award for Health-Related Efforts (Misawa Works)

Oct. 4 Health, Labour and Welfare Minister's Incentive Award (Industrial Physician Fumio Shinohara, Ehime Works)

Oct. 23 Fiscal 2002 Green Cross Award (Katsuaki Satani, Environmental Safety Department, Osaka Works)

Oct. 24 Oita Prefecture Governor's Award (for outstanding corporate efforts to reduce industrial waste and recycle)
(Oita Works)

Nov. 21 Award for Outstanding Occupational Safety
(Yuji Araki, Production Division, Osaka Works, and
Masataka Yano, Process & Production Technology
Center)

Jan. 16 Fiscal 2002 Health, Labour and Welfare Minister's Award for Outstanding Foreman Safety (Tatsuya Shiode, Production Division, Osaka Works, and Seigo Tanimoto, Oe and Kikumoto First Production Division, Ehime Works)

Awards for Overseas Group Companies

• In March 2003, Petrochemical Corporation of Singapore Pte. Ltd. (PCS) received—for the second year in a row—an award for Responsible Care management from the Singapore

Chemical Industry Council. In fiscal 2002, PCS won the Gold Prize in the category of process safety activities.

• PCS employee Wang Hui Hua also received an individual award in the category of Responsible Care activity contribution.

Other Award

Sumitomo Chemical's development of the insect growth regulator pyriproxyfen earned it the 49th Ohkouchi Memorial Award. Pyriproxyfen is effective

A representative of PCS receives Gold Prize for process safety activities.

against such difficult-to-control agricultural pests as whiteflies and scales as well as such public hygiene pests as mosquitoes and houseflies. Pyriproxyfen has been highly commended for its innovative method of pest control—unlike conventional insecticides, pyriproxyfen works by inhibiting insects' growth.

Communicating with Society

Sumitomo Chemical actively promotes the advancement of local communities through offering social action programs, working closely with members of these communities, and making efforts to increase communication.

Participating in Malaria Prevention Offensive

Sumitomo Chemical is taking part in the "Roll Back Malaria Campaign" being promoted by the World Health Organization (WHO). This program aims to reduce the number of people afflicted with malaria 50% by 2010. Each year, 300 million people are infected and one million people die from malaria. The Company is supplying Olyset mosquito nets, which contain a Sumitomo Chemical insect repellent, to prevent the transmission of malaria.



An Olyset mosquito net is displayed during a World Bank exchange program.

Working Closely with Local Communities

Sumitomo Chemical's works conduct their operations upholding the belief that the Company's mission is to develop along with the local communities. In this spirit, Sumitomo Chemical undertakes a variety of activities as a member of the local communities in which it operates.

Direct Communication with Local Residents

At the Chiba Works, prior to temporary halts in production for periodic inspections, explanatory meetings are held for residents, association board members and other representatives of the community. The Company takes such opportunities to explain the environmental activities being undertaken by the Chiba Works and Sumitomo Chemical as a whole.

Works Tours

Sumitomo Chemical offers tours of its manufacturing facilities for local residents, introduces its main products, and explains the environmental, health, and safety measures being implemented.



Summer works tour for elementary school students (Ehime Works)



Works tour for a residents' association (Misawa Works)



Works tour for local residents (Osaka Works)

Events Sponsorship

Each of our works aims to promote friendship with local residents under slogans such as that of the Misawa Works: "Collectively and in Harmony with the Local Community; in Peaceful Coexistence with Nature." Our works host a variety of sports competitions and other local events to foster closer ties with local communities.



Tsurusaki Cup Junior Tournament (Oita Works)three former participants in this tournament have become professional soccer players (J League)



Sumitomo Chemical Cup, little-league baseball tournament (Misawa Works)



Wakaba Cup Goodwill Volleyball Tournament (Osaka Works)



Anegasaki Industry Festival (Chiba Works)

Ichihara and Sodegaura Young Inventors Club

The Chiba Works offers programs for elementary and junior high school students that allow them to take part in industrial arts projects and chemistry experiments. These projects, aimed at fostering scientific creativity, are offered in collaboration with the Japan Institute of Invention and Innovation and the boards of education of the cities of Ichihara and Sodegaura. The Chiba Works will continue to offer these programs, which are extremely popular with local children, in fiscal 2003.



Ichihara and Sodegaura Young Inventors Club (Chiba Works)

PR Publications

A PR newspaper is produced by every works, with the aim of fostering communication with members of the local communities in which they operate. The Osaka Works' *Kasugade* and Oita Works' *Tsurusaki* newspapers are published regularly, featuring articles on the facilities' operations and Responsible Care activities.





Holding Regional Seminars on Responsible Care

Sumitomo Chemical is actively participating in the planning of Responsible Care activities promoted by the corporate members of the JRCC. Sumitomo Chemical holds explanatory meetings

for local communities, where information is exchanged with relevant regulatory authorities, schools, and municipalities, to further their understanding regarding the Company's activities and to communicate the spirit of Responsible Care.



Environmental Monitoring

The Oita Works asks individuals recommended by the residents' association as well as Sumitomo Chemical alumni and employees of all ranks that live in the vicinity of the plant to participate in environmental monitoring. Twice a year, the Works holds an Environmental Monitoring Conference to solicit opinions on various environmental issues from environmental monitors recommended by the residents' association.



Environmental Monitoring Conference (Oita Works)

Volunteer Activities

Each manufacturing facility conducts a variety of volunteer activities, such as cleaning the roads around the works. For example, every autumn, the Sumitomo Chemical Ehime Works Fellowship Society—the Ehime Works' alumni association—prunes the trees in Niihama Central Park; and the employees of the Misawa Works participate in Misawa City's beautification activities, which involves the planting of flowers and other greenery.



Cleaning the area along Route 16 in front of the Chiba Works



Planting flowers along a 700m stretch of road in front of the Misawa Works' main entrance

Sumitomo Chemical Website

The Company has set up a website (http://www.sumitomochem.co.jp) introducing Sumitomo Chemical's business operations and Responsible Care activities. With the aim of fueling young people's interest in chemistry, as well as their hopes and dreams, a special feature entitled "Junior Chemistry Dream World" is presented on the home page.



Junior Chemistry Dream World home page (Japanese only) (http://www.sumitomo-chem.co.jp/junior/)

Developing New Technologies and Environment-Friendly Products

Sustainable Chemistry

The ideas of "sustainable chemistry" and "green chemistry" are catching on throughout the world. These terms refer not only to lower consumption of energy and resources, but also to the chemical technologies that reduce or eliminate the generation and use of raw materials, chemical products, and by-products that are harmful to the environment and human health.

Sumitomo Chemical has vigorously engaged in incorporating sustainable chemistry into its operations. The Company is working to develop and improve energy-efficient and resource-saving processes to control CO₂ emissions and other materials that contribute to global warming. At the same time, the Company is committed to developing low-environmental-impact processes to continuously lessen environmental impact on air and water.

Low Environmental Impact Process Development

Sumitomo Chemical has actively developed manufacturing processes that have a low environmental impact not only by cleaning and recovering emissions, but also by manufacturing without releasing hazardous material.

- Revolutionary New Process for Propylene Oxide Production Using high-performance catalysts developed in-house, Sumitomo Chemical has developed a compact propylene oxide process that generates no styrene monomers, conserves energy and resources, and has strong market potential.
- Vapor-Phase Technology for Caprolactam Production Sumitomo Chemical has developed a new production process for caprolactam. Unlike conventional processes, this new technology produces caprolactam without generating ammonium sulfate as a by-product, by combining Sumitomo Chemical's proprietary catalysts with a new process from the Italian petrochemical company EniChem. Thus, it helps conserve energy and resources and is environment-friendly.
- Oxidation Technology for Hydrochloric Acid Sumitomo Chemical's oxidation technology for hydrochloric acid, created using catalysts developed in-house, is highly efficient.

By employing this technology, it is possible to recover the chlorine from hydrochloric acid generated as a by-product in manufacturing processes for such products as isocyanate vinyl chloride monomer, epichlorohydrin, and others in which chlorine is a raw material. Thus, this technology is expected to facilitate chlorine recycling and substantially reduce environmental impact.

New Process for Methionine

This new process has a low burden on the environment by using a technology that prevents the accumulation of impurities during recycling and controls crystalline forms produced by reactive crystallization accompanying gas absorption.

- Direct Oxidation Process for Methyl Methacrylate (MMA) Monomer, the Raw Material for Methacrylic Resin
- A manufacturing process that conserves resources and generates fewer by-products
- Hydroperoxide Process for Resorcinol, an Adhesive for Rubber

A manufacturing process that conserves resources and produces fewer waste materials

- Water-Based Solvent Process for Household Insecticides
- A process that does not use organic solvents
- Geometrical Isomer Control Technology, Asymmetrical Polymer Process

A manufacturing process that allows for efficiency in the production of plant growth regulators

- New Process for Fatty Acid Methyl Ester
- A new manufacturing process for fatty acid methyl ester that uses methanol in a supercritical state
- Technology for the High-Density Cultivation of Nitrifying Bacteria

Sumitomo Chemical has developed a technology to achieve high-density cultivation of nitrifying bacteria for a stable and

effective biological nitrification treatment for wastewater. Further tests are being conducted with an eye toward practical application of a technology that allows for the simultaneous treatment of wastewater that contains ammonia and organic effluent.



Pilot facility for testing technology for high-density cultivation of nitrifying bacteria

Energy-Saving Processes and Products

Sumitomo Chemical has developed many manufacturing processes over the years. The Company has excellent processes for manufacturing isobutylene, gas-phase polypropylene, and gas-phase linear low-density polyethylene, all of which improve energy and resource consumption and contribute to reduced CO₂ emissions. In addition, the Company has been working to develop a bioreactor that enables the replacement of traditional chemical reactions requiring higher

temperatures and pressures. Sumitomo Chemical has already yielded significant results by applying this process to the manufacture of active ingredients for household insecticides.

- Isobutylene Manufacturing Technology
- Gas-Phase Polypropylene Manufacturing Technology
- Gas-Phase Linear Low-Density Polyethylene Manu- Gas-phase polypropylene manufacturing facturing Technology





Lightweight Materials Contribute to Reductions in Exhaust Gas

The conversion to lightweight materials in the automobile industry has led to improved fuel consumption and reduced emissions of CO₂, NO₃, and SO₃. Making full use of the Company's comprehensive technological capabilities, Sumitomo Chemical is undertaking the development of high-performance plastics such



Automobile-related parts

as polymer alloys as well as carbon fiber, alumina fiber, fiber-reinforced composite materials, and other lightweight materials.

Water Purification and Water Protection Products

Water Treatment Agents

■ Sumifloc Organic Polymer Flocculant

Sumifloc is widely used as a flocculant sedimentation treatment for many types of wastewater.

■ Aluminum Sulfate Inorganic Flocculant



Agents for water purification

This product is used to purify water supplies and treat sewage and wastewater from factories.

■ Sumix Inorganic Flocculant

Sumix aluminum polychloride has superior flocculation capabilities that make it particularly effective in purifying water at temperatures at or under 5°C, very hard water, highly turbid water, and alkaline water.

■ Sodium Aluminate Inorganic Flocculant

Sodium aluminate is an auxiliary precipitate water treatment that, when combined with aluminum sulfate, increases water purification capability.

■ *Duolite* Ion-Exchange Resins

Duolite ES-371 N ion-exchange resin has been widely acclaimed for its effectiveness with respect to the removal of boron from water at large-scale effluent treatment facilities.

Dvestuffs

■ Sumifix HF New Environment-Friendly Dye Series

Sumifix HF, a new reactive dye series with high fixation, was developed to achieve a high color yield with minimum dyeing auxiliaries, thus reducing the amount of colored water and inorganic salts in effluent from dyeing factories.

■ Sumifix WF Reactive Dyes for Wool

Acid-mordant dyes and metalcomplex acid dyes, which contain heavy metals harmful to the environment and people's health, have traditionally been used for wool dyeing. Sumitomo Chemical developed Sumifix WF, a new reactive dye series that is heavy-metal-free, yet suitable for wool dyeing.



Environmennt-friendly dyes

Agricultural and Greenification Products

■ Plant Protection Chemicals and Public Hygiene Insecticides Agricultural chemicals and fertilizers are essential for growing crops and cultivating and protecting forests. For example, the Food and Agricultural Organization (FAO) confirmed the safety and effectiveness of the Company's insecticide *Sumithion* when it was used against a plague of desert locusts that hit Africa in 1998. In addition, the World Health Organization (WHO) has also confirmed that *Sumithion* is a safe and effective means of exterminating malaria-carrying mosquitoes.

In addition to the development of agricultural pesticides, the Company has recently been considering a new pest-control method known as Integrated Pest-control Management (IPM), which uses various natural insect predators and other biological pest-control agents to reduce the amount and frequency of pesticide use.

Sumitomo Chemical is focusing on the development of various new products that will be suitable for IPM use.

■ Oristar-A Biological Pest Control

Sumitomo Chemical has been cultivating a natural insect predator, *Orius sauteri*, to control the population density of thrips, a persistent insect pest that feeds on fruit, vegetables, and flowering plants. However, this method is rather ineffective during late autumn and early spring, when *Orius sauteri* are reproductively dormant. To overcome this difficulty, the Company has singled out strains of *Orius strigicollic* that are least likely to become reproductively dormant and is marketing them as *Oristar-A*.

■ Florbac DF—A New Pesticide for Gardening Use

Florbac is a Bt (Bacillus thuringiensis) formulation that makes use of the insecticidal activity of Bt—a naturally occurring soil bacterium—but is highly safe for use in the proximity of humans and other mammals, fish, and birds. Bt formulations are widely accepted as insecticides that can be used in organic farming and find extensive application in vegetable farming as basic insecticidal formulations for eradicating harmful insects.

■ Lano Tape New Chemical Pesticide Formulation

Lano, an insect growth hormone, is the active ingredient in Sumitomo Chemical's pest-control tape. Developed as a special pesticide formulation technology to control whiteflies, *Lano Tape* saves labor, is effective for long periods of time, and can contribute to IPM.

■ Coated Seeds¹

Coated seeds are good for use in automated sowing, offering increased efficiency in large farms. The use of coated tree seeds is a possible means of preventing the desertification of rain forest areas.

■ Coated Fertilizers: SR Coat, Super SR Coat

The use of coated fertilizers—fertilizers coated with resin—increases efficiency and reduces the burden on the environment because such fertilizers need be applied less frequently and in lower quantities than conventional fertilizers.

■ Sumidrip, Sumisansui¹ Irrigation System Products

The Company's products for use in irrigation systems—including *Sumidrip*, an irrigation hose, and *Sumisansui*, a sprinkler—are used to greenify dry land.

¹Marketed by the Company's subsidiary Sumika Agrotech Co., Ltd.



Lano Tape



Environment-friendly coated fertilizers

Recycling-Related Products

■ *Katawork*² Polypropylene Panel

A polypropylene panel for forming concrete that acts as a substitute for commonly used plywood from the South Pacific, *Katawork* is economical and excellent for use in construction. *Katawork* is an environmentally sound product that can be recycled.

■ Sumitomo TPE Polyolefinic Thermoplastic Elastomer Sumitomo TPE polyolefinic thermoplastic elastomer, a polyolefinic specialty resin, is currently experiencing a rapid increase in demand from such industries as automobile manufacturers for vehicle interior parts.

Demand is expected to expand in other areas, as this plastic is recyclable and easy to dispose of by incineration.

■ *Klintate*², *Klinalpha*² Polyolefin Agricultural Films *Klintate* and *Klinalpha* are special polyolefin films for agricultural use. After use, they can serve as fuel material or easily be recycled to make resins.

■ Sumitomo Press Mold (SPM) Technology

SPM technology, a skin material and core resin lamination molding system, is attracting attention in Japan and overseas because it synthesizes recyclable plastic that is lightweight, solvent-free, and environment-friendly.

■ Plastic Compatibilizer *IGETABOND*

IGETABOND has made a significant contribution to the manufacture of a wide range of polymer alloys. In addition, it is being promoted as a compatibilizer for the recycling of PET (polyethylene terephthalate) bottles and polyethylene bottle caps.

■ Paint-Removal Technology

Sumitomo Chemical has developed paint-removal technology that is considered a key process in the recycling of used car bumpers.

■ Sumipex Extra MMA Resin

Sumitomo Chemical's technology has enabled MMA (methyl methacrylate) resin, known for its high luster and weatherability, to be used for large-scale blow and foam molding. It is expected that *Sumipex Extra*'s range of applications will expand as a result of its recyclability.

■ Sumirez Resin Paper-Strengthening Finishing Resin

Paper recycling is increasing as pulp and paper companies make efforts to reduce the use of forestry resources. *Sumirez Resin*, which increases the strength of recycled paper, has a wide range of applications. In addition, the *SPI* series offers formalin-free paper-coating chemicals that improve printing quality and contribute to the production of safer materials for use in paper products.





Katawork polypropylene panels for forming concrete contribute to environmental conservation.

IGETABOND facilitates the recycling of PET bottles.

²Marketed by the Company's subsidiary Sumika Plastech Co., Ltd.

Home and Office Products

■ Suiaru-Power³ Dioxin-Absorbent Film

Sumitomo Chemical has developed *Suiaru-Power* dioxinabsorbent film, a new complex resin film that absorbs heavy metals and such poisonous gases as the dioxins produced at garbage incineration facilities.

Garbage bags made from the film have been approved by local government bodies. In addition, the development of other product applications, such as kitchen-use water drainage garbage bags⁴ and functional papers⁵, is under way.

■ Sevix² Gas Barrier Film

This gas barrier film effectively shuts out oxygen and is widely used for wrapping and preserving food. *Sevix* has won wide acclaim because it emits no chlorine gas during the disposal process.

■ Assist² Easy-Peel Sealant Film

Easy-peel sealant film is used to wrap a wide range of items—from food to medical products. It is an excellent sanitary packaging material that does not use solvents, which makes it more environment-friendly than traditional heat seal lacquer type coatings.

■ Sumikaflex Ecological Wallpaper Binding Agent

Demand has emerged for water-based paint compounds that are easy on the environment and comparable in quality to the best products currently available. Sumitomo Chemical is meeting this demand with *Sumikaflex*, an ethylene emulsion wallpaper binder.

■ Sumibox-Patacon² Foldable Box

The *Sumibox-Patacon* is one in a lineup of light, foldable boxes made from polypropylene. It has a broad range of uses, including separating and collecting items in the home or office.

■ Sunply Polypropylene Double-Wall Sheet and Sumipanel² Thick Hollow Panel

Polypropylene sheets and panels are lighter in weight and have more resistance to water and weather than wood- and paperbased products; they also enable the recycling of resins and contribute to forestry resource protection. Demand for these products has been increasing.

■ Sumithermal² Floor-Heating System

The *Sumithermal* system stores the surplus electricity made available by reduced demand at night and releases it during the day to power a floor-heating system, smoothing out the peaks in the daily demand for electrical power.

The residential heating system *Sumithermal LUNAKIT* was developed jointly with the Kansai Electric Power Co., Inc.

²Marketed by the Company's subsidiary Sumika Plastech Co., Ltd.

³Marketed by NIHON GREENPACKS Co., Ltd.

⁴Marketed by Hakugen Co., Ltd.

⁵Marketed by The Pack Corporation



Dioxin-absorbent film used in garbage bags



The Sumibox-Patacon, useful for the separate collection of recyclable items

■ Esprene VH-SPO Synthetic Rubber with Enhanced Workability

With low hardness and excellent workability, this environmentfriendly synthetic rubber can even be made into hoses and tubes, which are difficult to produce with conventional synthetic rubbers.

■ Excellen FX Environment-Friendly, Highly-Functional Plastomer

Sumitomo Chemical's proprietary technologies have enabled the production of *Excellen FX*, an innovative, high-quality metallocene polyolefin plastomer with excellent characteristics. Compared with conventional olefin resins, *Excellen FX* has superior flexibility and strength, is environment-friendly, and has a broad range of applications in a variety of fields.

■ Sumikasuper, Sumikaexcel Super Engineering Plastics Sumikasuper, an aromatic polyester, and Sumikaexcel, a polyether sulfone, have self-extinguishing properties enabling them to serve as flame retardants without halogen additives, which can release dioxins. These products are used widely in the electronics and electrical industries, which require the highest level (UL Standard V-O) fire retardant available.



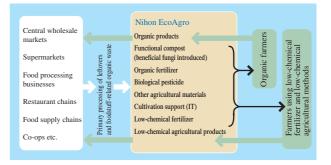
Super engineering plastics

Supporting Environment-Friendly Agriculture

Sumitomo Chemical established Nihon EcoAgro Co., Ltd., in April 2001. This new company acquires raw materials—for the purpose of producing highly functional compost and organic fertilizers—through contracts with such companies and organizations as central wholesale markets, food processing companies, supermarkets, restaurant chains, and consumer cooperative organizations, which must daily dispose of large amounts of leftover food and foodstuff-related organic waste. By adding growth-promoting fungi to organic waste-based compost, Nihon EcoAgro makes compost that is supplied to farmers throughout Japan to promote organic farming. Such farmers have a strong desire to find new routes for selling their products, while supermarkets and restaurant chains are seeking suppliers who can

assure ample and stable supplies of high-quality products grown organically or in conditions that use a lesser amount of chemical fertilizers and pesticides. In this way, Nihon EcoAgro acts as a gobetween for agricultural producers and their customers.

Outline of Nihon EcoAgro's Business Activities





Harvesting greenhouse oranges



Sumitomo Chemical is expanding operations on a global scale. The Company intends to promote Responsible Care at the international level, while complying with the environmental standards of each country.

Sumitomo Chemical's energy-saving, resource-conserving process technologies are making significant contributions at overseas plants. For example, the Company's direct oxidation process for MMA monomer production and gas-phase technology for polypropylene manufacturing are being used in petroleum, acrylic acid, and MMA operations in Singapore, as well as in polypropylene operations in North America.

In fiscal 2002, the Company commenced operations at local business sites in Thailand and the United States. In doing so, it employed international consultants to carry out due diligence with regard to environmental and safety management to ensure that there were no major risks associated with the acquisition of existing facilities.

Business Development by Sector (Fiscal 2002)

Basic Chemicals

■ Manufacture and sale of MMA sheets in Thailand

The Company established Sumipex (Thailand) Co., Ltd., though a joint venture with ITOCHU Corporation. Sumipex (Thailand) began local production of MMA sheets after acquiring production facilities and operating rights from a Thai manufacturer.

Petrochemicals & Plastics

■ Strengthening petrochemicals business in Asia

Sumitomo Chemical signed a contract with Shell Chemicals Ltd. to conduct a feasibility study for the construction of a new ethylene plant in Singapore. The Company aims to begin operations in 2007 on Bukom Island.

■ Aggressive expansion of propylene oxide business in Asia and the Middle East

Sumitomo Chemical has increased its investment in Nihon Oxirane Co., Ltd., a joint venture with Lyondell Chemical Company, to 60%. The company will serve as the key player in expanding Sumitomo Chemical's propylene oxide business in Asia and the Middle East.

Fine Chemicals

■ Strengthening of Thailand base

To boost its operations in Asia, the Company raised its share in Bara Chemical Co., Ltd., in Thailand from 42.5% to 55%.

IT-Related Chemicals

Completion of color filter plant in South Korea

As part of an effort to bolster Asian production facilities for LCD components, we completed construction of a large-scale fifth-generation color filter plant for Dongwoo STI Co., Ltd. (Sumitomo Chemical has a 97.3% share, including shares held by other subsidiaries) at the Pyungtaek Works of Dongwoo Fine-Chem Co., Ltd. Mass production began in March 2003.

■ Stronger LCD polarizing film production and marketing capabilities in South Korea, Taiwan, and China

In order to respond to customer needs in South Korea and Taiwan, where demand is growing faster than anywhere else in the world, we have established an integrated production system for polarizing film, a main component of LCDs. We also reorganized to improve commercialization at existing facilities in China, where rapid market growth is anticipated.

Establishment of compound semiconductor materials company To respond to trends in demand in domestic and overseas markets for compound semiconductors, we established metal organic epitaxial (MOEPI) wafer companies in Japan (Sumika EPI Solution Co., Ltd., Tokyo) and the United States (Sumika Electronic Materials, Inc., Delaware).

Agricultural Chemicals

■ Share participation in Isagro Italia

Sumitomo Chemical acquired a 50% share in Isagro Italia S.r.l., which sells agricultural chemicals under the umbrella of Italy-based Isagro Group. The Company already has direct sales companies in France and Spain, and the addition of a base in Italy gives the Company a direct sales network that encompasses three major EU markets.

■ Strengthening Bt insecticide and plant growth regulators businesses Valent BioSciences Corporation, a wholly owned subsidiary of Valent U.S.A. Corporation (wholly owned by Sumitomo Chemical), acquired from Certis USA, L.L.C. sole worldwide forestry-sector marketing rights for Thuricide®, an environment-friendly biological pesticide based on the naturally occurring *Bacillus thuringiensis* (Bt) bacterium. In addition, Valent BioSciences acquired exclusive development and marketing rights from China-based Lomon Bio Technology Co., Ltd., for Lomon's abscisic acid, a plant growth regulator that enables stable crop production.

Independent Review Report on the Environment, Health & Safety Report 2003



Independent Review Report on the "Environment, Health & Safety Report 2003 Responsible Care Activities of Sumitomo Chemical Company, Limited"

To the Board of Directors of Sumitomo Chemical Company, Limited

1. Purpose and Scope of our Review

We have reviewed the "Environment, Health & Safety Report 2003 Responsible Care Activities of Sumitomo Chemical Company, Limited" (the "EHS Report") of Sumitomo Chemical Company, Limited (the "Company") for the year ended March 31, 2003. The review consisted of performing certain procedures as described below in relation to the collection, compilation and calculation of the information included in the EHS Report. As this is the third year of our review, any indicators for years prior to the year ended March 31, 2001 were not subject to these procedures.

Our work does not constitute an audit or examination. We therefore do not express an opinion on the accuracy or completeness of the indicators or data bases used to compile the information or the representations made by the Company in the EHS Report.

2. Procedures Performed

We have performed the following review procedures agreed to by the Company's management;

- ① Obtained the responsible care (the "RC") information supporting the RC performance indicators and the environmental accounting indicators for the purpose of understanding the processes and the procedures of the Company for collecting the data information used to compile the EHS Report.
- With respect to the RC performance indicators and the environmental accounting indicators in the EHS Report, tested mathematical accuracy of the indicators on a sample basis and compared them on a sample basis with the supporting data compiled from the information collected by the Company.
- ③ With respect to the descriptive information in the EHS Report other than the indicators referred to in the above procedures, interviewed the Company's responsible personnel, made on-site inspections of a factory and a subsidiary, and compared such descriptive information with the data collected by the Company or the data found in certain published materials.
- 3. Results of the Procedures Performed

As a result of the procedures performed;

- ① We are not aware of any material modifications that should be made to the RC performance indicators, or the environmental accounting indicators in the EHS Report in order for them to comply with the Company's policies and procedures for gathering and reporting such information.
- We are not aware of any material modifications that should be made to the descriptive information other than the indicators in the EHS Report to be consistent with the information the Company collected and other information we obtained.

Asahi & Ca. Asahi & Co.

Osaka, Japan June 2, 2003

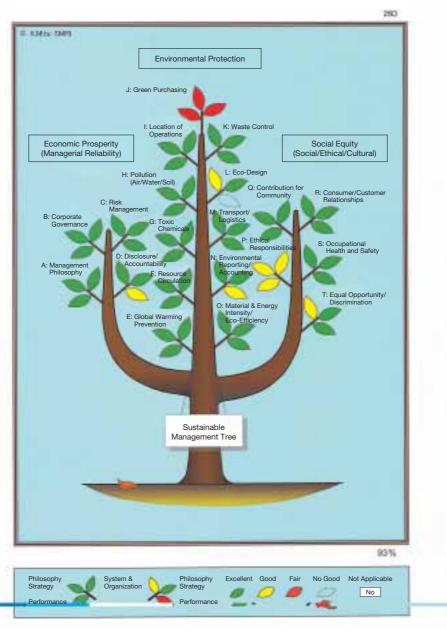
Feedback on the Environment, Health & Safety Report 2002

The *Environment, Health & Safety Report 2002*, issued in September 2002, was distributed to our customers, shareholders and investors, local residents, local governing bodies, affiliated companies, schools, and other stakeholders. As of March 31, 2003, we had issued 4,100 copies in Japanese and 1,100 copies in English. This report also appears on the Sumitomo Chemical website: (http://www.sumitomo-chem.co.jp/).

Sustainable Management Rating

Sumitomo Chemical has received a Sustainable Management Rating from the Rating Institute for Sustainable Management (SMRI). The rating process is carried out under the auspices of the Ministry of Education, Culture, Sports, Science and Technology, the Ministry of the Environment, and the Ministry of Economy, Trade and Industry (METI). Each year, 150 companies of the approximately 3,000 listed (except finance and securities companies) in the Japan Company Handbook that excel in the areas of management, environmental awareness, and corporate ethics are chosen on the basis of their environmental reports and press coverage throughout the year. From this group, 86 companies were selected as Green Top Runners for their sound management, environmental performance, and social ethics. On February 5, 2003, 72 companies were announced as having highly transparent operations. Sumitomo Chemical's results are shown on the figure below and reflect the Company's rating of 93%.

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IT-Related Chemicals Research Laboratory

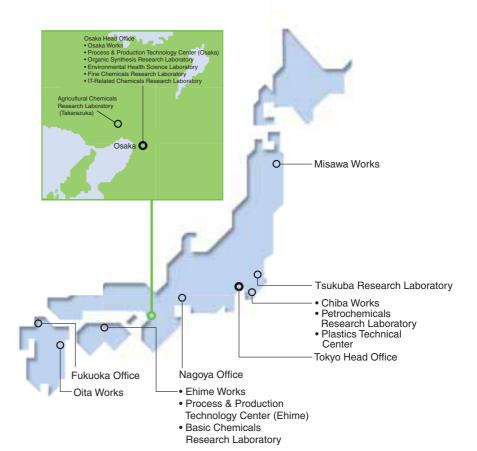
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Responsible Care

Sumitomo Chemical Company, Limited, as a "Responsible Care" Company, voluntarily implements policies that give consideration to safety, health and the environment, from chemical product development to disposal. The Responsible Care mark may only be used by those companies that are members of the Japan Responsible Care Council.

Published: September 2003



