# **SUMITOMO CHEMICAL**



# **Environment, Health & Safety Report 2001**

**Responsible Care Activities of** 

**Sumitomo Chemical Company, Limited** 

Responsible Care refers to voluntary activities conducted by companies in the areas of environment, health, and safety throughout the entire product life cycle. As of December 2000, there were Responsible Care associations in 46 countries.

# Our Code of Conduct: Nine Guiding Principles

- 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 business 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 workplace sound and energetic, and every one of us will make efforts to become a professional who has advanced skills and expertise in his or her field of responsibility.
- 7. We will actively communicate with our various stakeholders, such as shareholders, customers and regional communities.
- 8. We, as a corporate member of an international society, will esteem the culture and custom in each region around the world and contribute to the development of those regions.
- 9. We will strive for the sound development of our Company through business activities conducted in accordance with the guiding principles stipulated hereinabove.



The main focus of this report is Sumitomo Chemical Company Limited's environment and safety activities during the fiscal year ended March 31, 2001, but some activities from the fiscal year ending March 31, 2002, are also included.

The performance data included in this report reflect the aggregate performance of all of Sumitomo Chemical's domestic works—Ehime Works, Chiba Works, Osaka Works, Oita Works, and Misawa Works.

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Growing in Harmony with the Global Environment

Sumitomo Chemical recently set forth a new three-year corporate plan covering the period through March 31, 2003. Aimed at creating a road map for future growth, with particular emphasis on developing the Sumitomo Chemical Group's business in high-priority fields, the plan incorporates corporate visions and basic policies that will help us pursue a new growth path in the 21st century.

Sumitomo Chemical has embraced Responsible Care (RC) activities as an important cornerstone of our corporate management. We are aggressively promoting RC initiatives and have made "growing in harmony with the global environment" one of the pillars of our three-year corporate plan. By doing so, we intend to fulfill our social responsibility and build public trust, as well as improve our overall competitiveness.

In accordance with our Corporate Policy on Product Quality, Safety and Environment, we are promoting RC activities in every field of our operations—including R&D, production, logistics, marketing and sales—so as to conserve energy, reduce waste materials and minimize the impact of our operations on the environment. We are also working hard to

develop "sustainable chemistry," with a view to lowering the risks associated with waste materials and their impact on the environment.

There is an increasing need for establishing international partnerships to address such issues as global warming and chemical management. As a concerned and responsible global corporate citizen, Sumitomo Chemical will continue to develop RC initiatives for the benefit of humankind, society and the natural environment.

This report is designed to provide an overview of Sumitomo Chemical's RC activities. In the following pages, readers will find a detailed description of our efforts in such areas as environmental accounting and environmental impact reduction. The report has been audited by an external agency to ensure its credibility and transparency. We welcome your candid and constructive comments.

米含弘昌

Hiromasa Yonekura

President

# In April 1994, Sumitomo Chemical formulated its Corporate Policy on Product Quality, Safety and Environment.

This corporate policy expresses Sumitomo
Chemical's commitment to giving customer satisfaction, maintaining zero-accident and zero-injury operations, ensuring the safety of raw materials, intermediates, and products, and making efforts to reduce the environmental impact of its products at all stages of their life cycles. Sumitomo Chemical's employees are fully aware of this policy and act on the basis of its commitments as they constantly strive for improvement and strictly observe legal requirements.



Oita Works

# Corporate Policy on Product Quality, Safety and 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 environment.

- 1. To supply high-quality products and services that satisfy customer needs and ensure safety in their use
- 2. 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

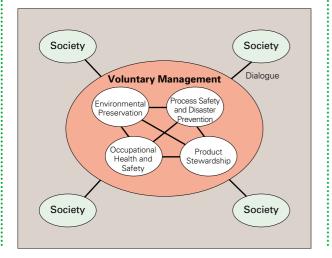
Hiromasa Yonekura, President Sumitomo Chemical Company, Limited



Under the guidance of the Responsible Care Committee, Sumitomo Chemical is working to provide efficient and comprehensive Responsible Care.

# 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 the 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 four 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 Company's basic policies on product quality, safety and environment, making long-term plans, and conducting RC internal audits. Furthermore, to implement specific RC measures, committees have been set up at each of the Company's manufacturing works and research laboratories.

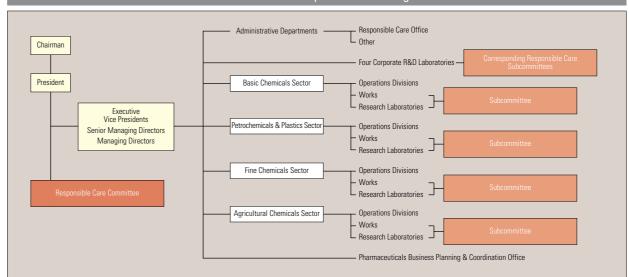
### **Responsible Care Office**

The Responsible Care Office is in charge of environmental preservation, process safety and disaster prevention, occupational health and safety, product stewardship, product safety, product quality assurance, and production technology. The office also acts as secretariat to the Responsible Care Committee.



The Responsible Care Committee

# Sumitomo Chemical's Responsible Care Organization



Sumitomo Chemical is working to clarify the goals and implementation procedures set forth in the Policy for Responsible Care Activities, which was established to develop specific initiatives enabling the Corporate Policy on Product Quality, Safety and Environment to be applied in practice.



Pocket-sized booklets distributed to all employees

# Responsible Care Rules and Regulations

To ensure that all Sumitomo Chemical employees carry out their duties while thoroughly recognizing both the Corporate Policy on Product Quality, Safety and Environment and the Policy for Responsible Care Activities, the Company has produced these policy statements in pocket-sized form and distributed them to all employees.

In addition, the Company has established various classifications of regulations that are intended to develop the RC provisions into a specific codified form. The regulations encompass process development and commercialization management, environmental management, process safety management, chemical safety management, etc. To conduct RC audits, the Company has established various corporate guidelines, including those for RC internal audits, environmental audits, process safety and occupational safety audits, and chemical safety management audits.

# **Policy for Responsible Care Activities**

Established January 1995 Responsible Care Committee

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

#### 1. Objectives

- Stable operations without accidents or injuries, and a good working environment
- 2) Assessment and reduction of environmental load to maintain co-prosperity 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

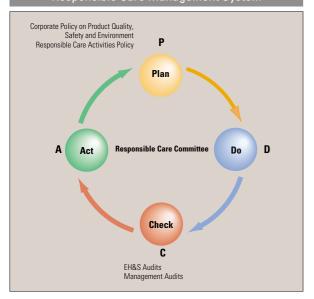
#### 2. Methods

- To abide by regulations on environment and safety at home and abroad and improve its environmental and safety management standards while abiding by international standards
- To keep itself well-organized including in such areas as internal regulations, with clearly defined responsibilities of each section carried out in a timely manner
- 3) To promote the planning, implementation, and improvement of management of environment and safety through Responsible Care audits
- 4) 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

As part of its efforts to promote RC activities, Sumitomo Chemical has enhanced its internal audit program, which, in addition to the environment and safety, now includes product liability and other areas. To support Group companies, Sumitomo **Chemical continues to hold Group Liaison** Conferences, and Company experts have begun conducting RC audits at Group companies. In this way, Sumitomo Chemical is striving for continual RC improvement across the entire Group.

Sumitomo Chemical has established an integrated environmental and safety activities framework known as the Responsible Care Management System, based on the PDCA cycle. In this and other ways, the Company is striving to raise the quality of its RC activities.

### Responsible Care Management System



# Responsible Care Audit System

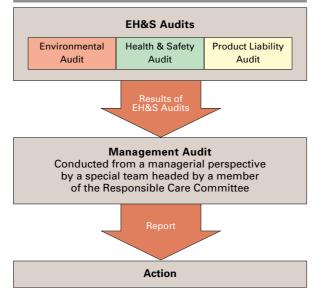
RC audits are conducted each year and comprise Environment, Health & Safety (EH&S) audits, which are conducted by environment, safety, and product liability experts, and management audits, which are conducted from a managerial perspective by a special team headed by a member of the Responsible Care Committee.

### **Responsible Care Internal Audits**

Located in eight different regions, each of the Company's works and R&D facilities is audited in two stages: EH&S audits and a management audit.

EH&S audits are carried out at each operating division of the Company's four business sectors and at a transfer terminal of the Physical Distribution Division.

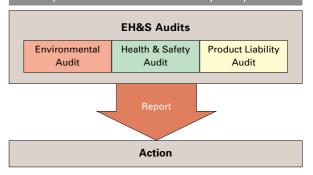
# Responsible Care Internal Audits



# **RC Audits for Group Companies**

EH&S audits will be carried out at approximately 45 domestic and overseas Group companies that are involved in manufacturing or other activities requiring Responsible Care. As of the end of fiscal 2000, 26 companies had been audited.

## Responsible Care Audits for Group Companies





#### ISO 14001 Certification

Sumitomo Chemical promotes environmental control activities—an integral part of Responsible Care—in accordance with ISO 14001 standards, an internationally recognized set of standards for environmental management systems.

By the end of fiscal 1998, all five of the Company's manufacturing works had obtained ISO 14001 certification, which has been renewed in subsequent years following recertification audits and other periodic inspections.

Works and Certification Number		fication Number	Date of Certification		
	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		

ISO 14001 certificates

# Education for Employees

Sumitomo Chemical has thorough RC education and training programs for each level of management and employees. Particular curricula were prepared for training managers and staff engaged in production, logistics, marketing and sales, procurement, and R&D. The managers and employees engaged in their respective assignments shall be well trained and obtain knowledge of Responsible Care as professionals working at a chemical company.

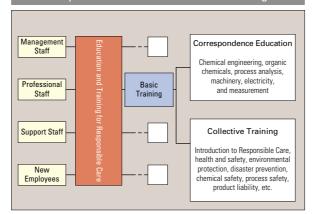
### Raising Responsible Care Consciousness

The management of Sumitomo Chemical, from the president to the general manager of each manufacturing works and research laboratory, is continually conveying the RC message to the Company's employees.

In addition, the Company endeavors to raise employee awareness of Responsible Care by giving special awards to any business operation unit that achieves outstanding performance in RC activities. In fiscal 2000, Sumitomo Chemical gave presidential safety awards to five manufacturing works and four R&D centers for their adherence to Company safety standards.

Sumitomo Chemical also makes use of such internal communication media as the Company's intranet and in-house magazines to broaden RC consciousness among management and employees.

# Responsible Care Education and Training





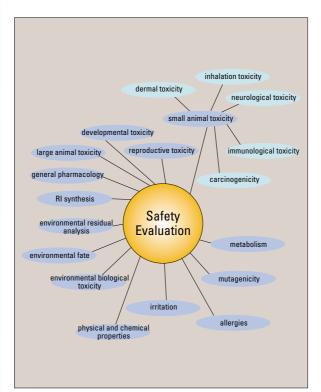
In-house publications as a means of raising RC consciousness

A wide range of technical data relating to environmental safety, process safety, accident prevention, occupational health and safety, and chemical safety is essential for the promotion of Responsible Care. Two of our corporate research laboratories, therefore, provide comprehensive technical backup in the areas of the environment and safety.

# Support from Corporate Research Laboratories

### **Environmental Health Science Laboratory**

Sumitomo Chemical's Environmental Health Science Laboratory is one of the largest toxicological research facilities in Japan. At the facility, approximately 200 specialists use state-of-the-art technology to evaluate the safety of raw materials, intermediates, and products and their impact on human health and the environment.



Research areas relating to the safety assessment of chemical substances

### **Process & Production Technology Center**

At the Process & Production Technology Center, Sumitomo Chemical assesses the potential fire and explosion hazards of chemical substances, develops and integrates process safety technologies, evaluates and researches materials used for manufacturing facilities, and verifies the safety of newly developed processes through the experimental operation of pilot plants. The Center plays an important role in ensuring that the Company maintains zero-accident and zero-injury operations.



Particle explosion tests



# Promoting Responsible Care throughout the Life Cycles of Our Products

Responsible Care comprises voluntary initiatives to assess the environmental and safety issues involved throughout the life cycle of each product, from R&D to final product disposal, and take appropriate measures to improve environmental and safety controls in the chemical industry.

As a chemical manufacturer, Sumitomo Chemical develops and markets a wide range of chemical products that contribute to a better quality of life. At the same time, it devotes constant attention to the safety and environmental aspects of these products at every stage, from R&D to final product disposal.

# Environment as part of its plans to promote a shift from a statutory compliance-based approach to one formulated on self-regulatory principles. At the same time, the Safety Management Guidelines were introduced to make safety assessments at each stage of development, thereby reducing environmental burden and achieving zero-accident

In April 1994, Sumitomo Chemical drew up its

Corporate Policy on Product Quality, Safety and

In September 1997, the Company revised its Process Development and Commercialization Regulations, which stipulate requirements for executing process development and commercialization projects and specify health, safety, and environmental issues that should be dealt with throughout the project.

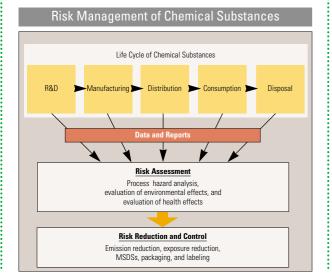
and zero-injury operations.

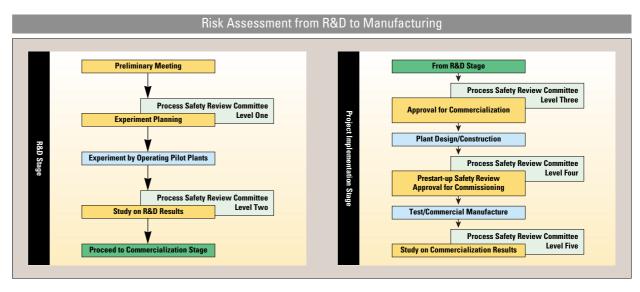
In the R&D and commercialization stages, the following information is collected and evaluated:

- 1. Detailed survey and evaluation of public domain information
- 2. Collection and evaluation of safety data through experiments

- 3. Studies on materials and equipment used for chemical plants
- 4. Verfication of safety through pilot plant experiments Based on the information obtained in this manner. Sumitomo Chemical compiles information on the potential fire and explosion hazards, exposure limits, manufacture, use, and disposal of chemicals, and carries out process hazard analysis and impact assessment on the environment and human health. Results of these assessments are applied to the design of process and operation procedures, and communicated to the people concerned.

As shown in the diagram below, no development stage is forwarded to the next stage unless it has been proven to satisfy safety requirements. Furthermore, in fiscal 2001 Sumitomo Chemical strengthened its risk assessment system by adding a fifth assessment level, which ensures that the Process Safety Review Committee continues to convene at each stage of the R&D and manufacturing processes.





From R&D to Manufacturing

## Safety in Logistics Operations

Sumitomo Chemical strives to ensure chemical safety throughout the logistics process. The Company cooperates closely with shipping companies to establish safety standards and conducts necessary training together with other accident-prevention activities. The Company also distributes Material Safety Data Sheets (MSDSs), Yellow Cards (instruction cards for emergency response), and Guidance for Emergency Response in the Transportation and Handling of Hazardous Materials as well as prepares broad emergency measures.

Sumitomo Chemical is developing logistics systems for reduced environmental impact through the recycling, reuse, and industry standardization of transportation materials and packaging.



Ensuring safety in chemical transportation: the Yellow Card

# Reducing Waste

Sumitomo Chemical has been working to incorporate the three Rs-reduce, reuse, and recycle-into every aspect of its operations.

The Company is cooperating with other chemical manufacturers to promote the above initiatives through the activities of the Plastic Waste Management Institute and similar industry organizations in which it participates.

Through the development of a high-performance catalyst for the manufacturing process and similar innovations, Sumitomo Chemical has increased production yield while reducing energy and resource consumption. Furthermore, the Company is engaged in developing new technologies that reduce the output of waste materials while it searches for the recovery and effective use of by-products in the manufacturing process.

The Company is developing products useful for recycling processes and has succeeded in developing and marketing new products that are easily recyclable.

# **PCB** Recovery and Treatment

In line with the Law Concerning the Appropriate Decomposition of PCB Waste, Sumitomo Chemical is making a systematic effort to properly recover and decompose polychlorinated biphenyls (PCBs) from such devices containing PCBs as capacitors. Furthermore, the Company has set aside a specific area of its waste storage facilities to appropriately manage waste materials requiring special managerial attention under the Waste Disposal and Cleansing Law, which was enacted to ensure the proper disposal and cleansing of waste materials.

# **Chemical Safety Management**

Sumitomo Chemical has been improving its Toxicity Assessment System for Chemical Substances (TASCS), which was set up to compile information and assess risks related to chemical substances. To facilitate and expedite the transfer of information within the Company, the compiled and analyzed data is stored in a product safety database called CHEMSAFE2. It is also used in MSDSs to provide safety information to customers and ensure the safety of both the workplace and community. In addition, an MSDS database has been created to further expedite the provision of information and make it more reliable.

The chemical industry is committed to assessing the safety of high-production-volume (HPV) chemical substances on a global scale. In line with this commitment, Sumitomo Chemical has joined a consortium of chemical companies to supply basic safety information on the HPV chemicals it produces.

Although we review the safety of a product before commercialization, considering its intended usage, we will continue to compile and evaluate all relevant information to ensure the appropriate management of each chemical product throughout its entire life cycle.

# Product Quality Assurance

Sumitomo Chemical has achieved a high level of customer satisfaction under the guidance of its **Responsible Care Committee. The Responsible** Care Committee has set conduct guidelines that guarantee product safety and quality as well as prompt, reliable product delivery.

To support RC activities, Sumitomo Chemical is making a Companywide effort to provide product quality assurance.



ISO 9002 certificates

Works and Certific	Date of Certification	
Ehime Works:	JCQA-0019	October 24, 1994
	JCQA-0320	April 6, 1998
Chiba Works:	JQA-0829	March 24, 1995
Osaka Works:	JQA-0721	December 22, 1994
Oita Works:	JQA-1069	December 8, 1995
Misawa Works:	JQA-0752	December 28, 1994

Established in November 1994

# Policy for Quality Assurance Activities

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

# Objectives

- Efficient supply of products with international competitiveness in terms of safety, quality, cost and delivery readiness
- 2 Prevention of significant irregularities in product quality and safety that may cause product liability-related accidents
- 3 Product quality improvement and cost reduction for better performance of the Company

#### Methods

- Give priority to customers' safety and satisfaction
- 2 Establish quality assurance systems, define responsibilities and promote standardization
- 3 Educate employees for better understanding of quality assurance and product safety
- (a) Improve the mode of work and the standard of management by utilizing scientific management methodology
- 6 Activate the PDCA (plan, do, check and act) cycle

#### ISO 9002 Certification

Sumitomo Chemical had received ISO 9002 certification for international product quality assurance at all five of its works as of the end of fiscal 1995. Such certification has been renewed in subsequent years following regular inspections.

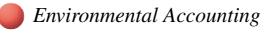
### Company Organization Relating to Quality Assurance

In 1994, Sumitomo Chemical established the Quality Assurance Department (which became the Responsible Care Office in January 2000) and clarified product quality management responsibilities.

Furthermore, the Company has set up quality assurance departments at each manufacturing works. These sections are responsible for the quality control of raw materials, intermediates, and products as well as managing product safety and performing analyses and tests.

Data





Sumitomo Chemical is one of the original members of the Japan Responsible Care Council (JRCC), which was established in 1995. The Company continues to adhere to the Council's RC guidelines and initiatives.

The Company has drawn up the Voluntary Environmental Action Plan and publishes the results of efforts made under the plan each year in its annual environmental report.

The Voluntary Environmental Action Plan can be accessed on the Sumitomo Chemical Web site.

### **Voluntary Environmental Action Plan**

- 1. Energy Conservation
- Objective: decrease unit energy consumption more than 1% on average every year
- 2. Industrial Waste Reduction
- Objective: reduce landfill production 75% by fiscal 2010
- 3. Environmental Management
- Objective: for each manufacturing works, establish a challenging environmental action program that will adhere to environmental policy; strive for continuous improvement in environmental management and performance
- Environmental Protection for Overseas Operations
   Objective: when developing overseas businesses, employ energy conservation and environmental protection technologies of the same quality as those used domestically
- 5. Environmental Impact Reduction
- Objective: reduce emissions of nitrous oxides ( $NO_x$ ), sulphur oxides ( $SO_x$ ), soot, and the level of chemical oxygen demand (COD); protect the environment against air pollution and water contamination
- 6. Reduction of Voluntarily Managed Harmful Atmospheric Pollutants
- Objective: reduce voluntarily managed harmful atmospheric pollutants in line with the Company's voluntary emissions targets

Stage One: fiscal 1997 through fiscal 1999 60% overall reduction compared with 1995 (achieved) Stage Two: fiscal 2001 through fiscal 2003 75% reduction compared with 1999 (goal) 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.

- 1. Environmental Accounting Objectives
  - A. Improve environmental protection efficiency by numerically analyzing environmental activities
  - B. Maintain a long-term perspective in the development of environmental measures
  - C. Improve enterprise transparency by disclosing information
- 2. Items Related to Environmental Accounting
- A. Scope: Sumitomo Chemical's non-consolidated operations

- B. Period: Fiscal 2000 (ended March 31, 2001)
- C. Category: Refer to the guidelines of the Ministry of the Environment
- D. Independent Review: By independent professional reviewer (Asahi & Co./Andersen)
- 3. Environmental Accounting Results for Fiscal 2000 As shown in the environmental accounting exhibit below, Sumitomo Chemical's environment-related investments for fiscal 2000 totaled ¥2.1 billion and expenses amounted to ¥12.8 billion. The economic results of the Company's environmental activities were calculated based on reliable information, and, due to recycling and energy and resource conservation, expense reductions totaled ¥2.2 billion.

Note: Calculated on a consolidated basis that includes Sumitomo Chemical's primary subsidiaries (14 domestic and 3 overseas), environmental costs totaled approximately ¥2.6 billion for investments and ¥17.5 billion for expenses.

	T	otal Costs for Environmental Protection (Billions of yen)		
Category Primary Environmental Efforts				Cost
Сс	Cost to reduce environmental load that production/service activities cause in business area			
own	Costs of pollution control	Prevention of air pollution, water pollution, soil contamination, noise pollution, vibration, stench, top-soil preservation	(0.6)	(5.4)
akd	Costs of global environmental protection	Prevention of global warming, ozone layer destruction, etc.	(0.0)	(0.3)
Brea	Costs of resource recycling	Saving resources and energy, saving water and using rainwater, reducing and disposing of waste, recycling waste, etc.	(0.8)	(2.9)
up	osts to reduce environmental load that arise estream and downstream in connection with oduction/service activities	Appropriate recycling and recovery procedures for products and packaging materials	0.0	0.0
En	vironmental costs in managerial activities	Costs associated with the environmental management system, environmental education for employees, and the monitoring of the environmental impact of business activities and products	0.0	0.5
R٤	&D costs for environmental protection	Development of products contributing to environmental protection	0.7	3.2
Environmental costs in social activities		Environmental policies relating to protecting the natural environment and enhancing its scenic beauty and greenery, supporting community initiatives aimed at environmental protection	0.0	0.5
Сс	osts of environmental damage	Environmental rehabilitation of contaminated environments and other environmental damage	0.0	0.0
1	Total			

Economic Results (Billions of yen)	
Results	Amount
Expense reductions due to energy conservation	0.2
Expense reductions due to resource conservation	0.6
Expense reductions due to recycling activities	1.4
Total	2.2

These economic results do not include fortuitous results due to risk avoidance and other factors or estimated contributions to profits and other presumed gains.

Total amount of investments for the term	27.6
Total amount of R&D expenses for the term	29.4



# Environmental Protection and Safety-Related Investments

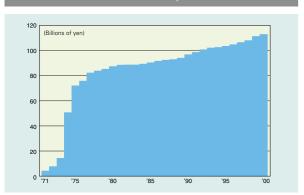


Sumitomo Chemical has long pursued an environmental protection and safety policy based on zeroaccident and zero-injury operations and mutually beneficial community relationships.

The following investment amounts differ from those in the Environmental Accounting section on the previous page because the expense category for such areas as environmental protection and safety-related expenses has been narrowed to exclude those expenses that form part of the expenditures on streamlining, new plants, additions to existing plants, and other start-up and project expenses. Calculated in terms of construction starts, in 2000 environmental protection investments reached ¥0.4 billion, safety-related investments totaled ¥1.2 billion, and total investments amounted to ¥1.6 billion.

From 1971 to 2000, the Company invested a total of ¥112.9 billion in environmental protection and safety controls. Of this, 75% went to environmental protection investments and 25% to safety control.

Cumulative Environmental Protection and Safety-Related Investments since 1971



Environmental protection and safety-related investments that form part of the expenditures on streamlining, new plants, additions to existing plants, or starting new businesses are not included. In addition, total environmental protection costs do not include R&D investments.

In line with its basic principle of "putting safety first," Sumitomo Chemical is working to prevent occupational accidents at its plants and facilities to ensure the safety, health, and security of its employees and the communities in which it operates. More specifically, the Company is working steadily and systematically to build safe manufacturing facilities and processes and to ensure safe production practices based on its Safety Management **Guidelines and Internal Safety Policies. The Company** is striving for the continuous improvement of its safety performance by examining the detailed results of RC internal audits.

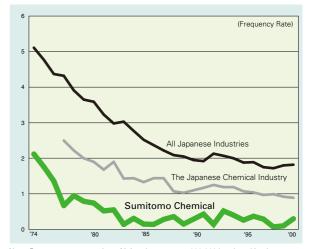
In December 2000, a fire broke out at the Chiba Works' synthetic rubber production facilities. This accident caused concern among local residents and all people involved. The facilities were completely restored by July 2001.

The entire Group is working to improve safety management to ensure that this type of accident does not recur.

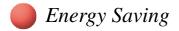


Aiming for zero-accident, zero-injury operations

# Annual Frequency of Injuries at Work

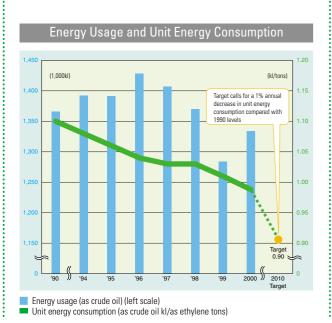


Note: Frequency rate = number of injured persons x 1,000,000/total working hours (number of injured persons = number of persons absent from work for one day or more as a result of an accident)



Sumitomo Chemical has long been committed to reducing its energy consumption. Energy conservation is an important part of Sumitomo Chemical's efforts to reduce global warming. The Company is making efforts to radically streamline processes as well as make sound operational improvements in such areas as machine efficiency and emissions recovery.

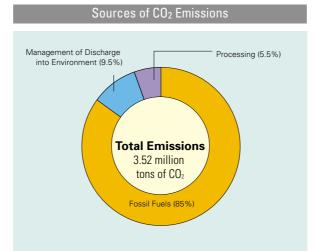
The Company is striving to decrease unit energy consumption by more than 1% on average each year to comply with energy conservation laws. In fiscal 2000, Sumitomo Chemical achieved a 2.4% year-on-year reduction in unit energy consumption.



# Carbon Dioxide and Specific Chlorofluorocarbons (CFCs)

### Carbon Dioxide Emissions

Sumitomo Chemical emitted 3.52 million tons of CO<sub>2</sub> during fiscal 2000, 85% of which came from fossil fuel consumption (including purchased electricity and steam).



# Management of Specific CFCs

With such problems as global warming and the destruction of the ozone layer in mind, Sumitomo Chemical is revising its product plan (specific CFCs will not be used) for cooling devices that run on trichlorofluoromethane (CFC-11) and dichlorodifluoromethane (CFC-12).

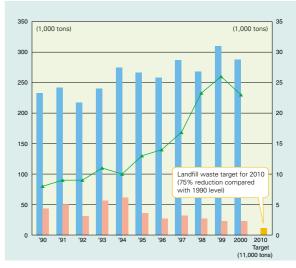
# Waste Disposal Management

Sumitomo Chemical is also working to improve its waste disposal management.

The Company is devising methods to reduce the environmental impact of its products and process development practices, rehabilitate incinerated sludge ash, and condense organic sludge, which is the excess sludge created during the activated sludge process.

The Company's goal for 2010 is a 75% reduction in the amount of landfill waste produced compared with the level in 1990.

# Waste Materials Produced, Landfill Waste, and Externally Recycled Waste



- Amount of externally recycled waste (not including thermal recycling) (right scale) Amount of waste materials produced
- Amount of landfill waste (landfill both inside and outside manufacturing works)



# Pollutant Release and Transfer Register (PRTR) Environmental Activities

Sumitomo Chemical will continue to harness the benefits found in the development, production, and use of chemical substances. At the same time, to increase safety and ensure that its business activities are in harmony with the environment, the Company strives to reduce the release of such substances.

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 2000, the Company surveyed all 480 chemical substances, including 354 class-one chemicals, under the PRTR Law\*1.

As a result of these inspections, Sumitomo Chemical found that it produced or used 140 of the 480 targeted materials, and, as of the end of fiscal 2000, the Company had released a total of 1,984 tons of such materials and transferred a total of 757 tons. Of the chemicals released, 90% were discharged into the air, 10% into the water, and 0% into the soil. Based on analyses of inspection results and the volume of materials released, the Company prioritizes its environmental measures and strives to further strengthen its control over the release of targeted chemicals by devising concrete methods to meet the release-reduction targets it sets.

In addition, the Japanese government has emphasized the need to reduce air pollutants and, in particular, has attached special importance to 22 substances. The JCIA has targeted 12 of these for industrywide self-regulatory measures. Sumitomo Chemical, which currently releases 10 of the 12 targeted substances, is drafting its second releasereduction plan for fiscal 2001-2003 and is creating various policies to ensure that the goals set forth within the plan are met.

Chemicals Released and Transferred (the 10 most released and the 5 most transferred chemical substances)

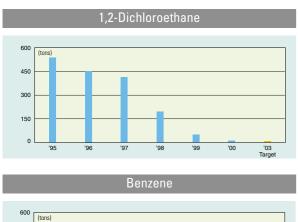
Name of Chemical Compound	Amount Released (tons)			Breakdown		Amount Transferred (tons)	
Name of Chemical Compound			Air (tons)	Air (tons) Water (tons) Soil (tons)			
Toluene	428.2	1	364.2	64.0	_	39.4	4
Hexane*	217.1	2	216.8	0.3	_	_	
Cyclohexane*	151.0	3	151.0	_	_	_	
Benzene	136.9	4	135.0	1.9	_	_	
Methyl buthyl keton*	111.4	(5)	99.8	11.6	_	23.8	
Styrene monomer	107.3	6	107.3	_	_	_	
Vinyl acetate	96.7	7	96.7	_	_	_	
Dichloromethane	69.0	8	68.6	0.4	_	34.5	(5)
Acetone*	64.8	9	59.5	5.3	_	_	
Methyl methacrylate	63.5	10	63.5	_	_		
1.2-Dichloroethane	12.7		12.3	0.4	_	339.3	1
Dimethylamine*	_			_	_	216.5	2
Triethylamine*	42.5		4.6	37.9	_	56.5	3
Subtotal for the Compounds Listed Above	1,501.1		1,379.3	121.8	_	686.2	
Subtotal for the Remaining 127 Chemical Substances	483.2		403.9	79.3	_	70.7	
Total for All 140 Chemical Substances	1,984.3		1,783.2	201.1	_	756.9	

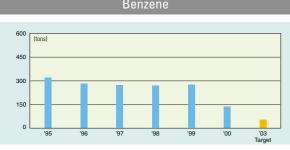
The PRTR inspection covers chemicals with production or use amounts exceeding five tons a year.

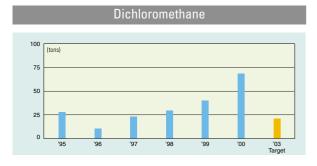
<sup>\*1</sup> The Law Concerning Reporting, etc., of Releases to the **Environment of Specific Chemical Substances and Promoting** Improvements in Their Management

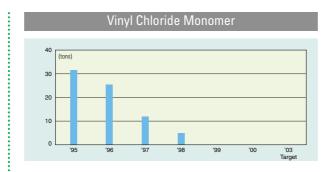
<sup>\*</sup>Chemicals not targeted by the PRTR Law (those targeted by JCIA)

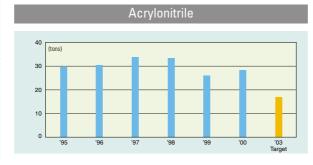
# Voluntary Management of Hazardous Air Pollutants (Results and Targets)

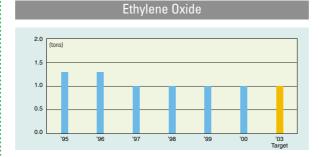




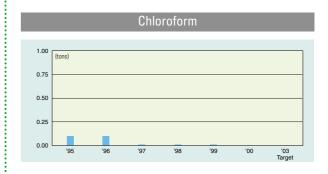


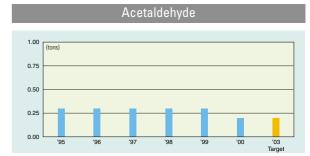






# 1, 3-Butadiene 1.00 0.75 0.50 0.25 Formaldehyde 0.75





#### 2000 Release-Reduction Performance

1,2-Dichloroethane: 30-ton reduction through substitution Benzene: 140-ton reduction by improving tank structure, etc.

#### Planned Reductions for 2001-2003

1,2 Dichloroethane: through substitution Benzene: recovery of gas released from both tanks and processes Acrylonitrile: recovery of gas released from tanks Dichloromethane: recovery of gas released from processes

# Prevention of Air Pollution and Water Contamination

Sumitomo Chemical is committed to reducing the amount of  $NO_{x_i}$   $SO_{x_i}$  and soot released into the atmosphere and the amount of COD, nitrogen, and phosphorous released into waterways. In addition, the Company is making efforts to conserve water and safeguard both the atmosphere and water resources.

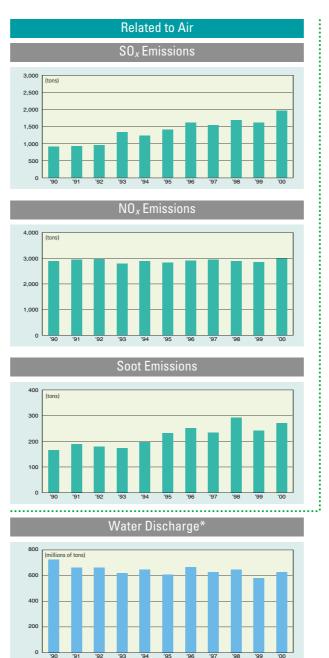
In line with this commitment, Sumitomo Chemical has concluded cooperative agreements with the local governing bodies at each of its manufacturing works to encourage the implementation of stricter environmental safeguards that go beyond mere compliance with the laws and regulations.



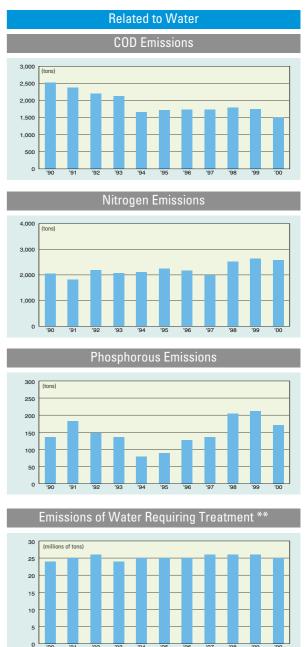
Wastewater treatment plant



Proprietary technology used for denitrification



\* Including seawater used as a coolant



<sup>\*\*</sup> Water that is released from plants and undergoes activated sludge wastewater treatment, wastewater neutralization, or other treatment

# International **Development**

international operations.

# **Developing New Technologies**

At the Production Technology Center (Ehime), Sumitomo Chemical is developing new technologies to improve the stability and efficiency of the biological processes used for removing nitrogen from wastewater. Currently, the Company is developing a technology for the high-density cultivation of nitrifying bacteria and conducting tests to commercialize technology for the simultaneous removal of ammonia and organic matter from wastewater.



**Sumitomo Chemical has expanded its business** 

respective environmental standards applied in

each country where it operates, the Company is

determined to promote RC activities through its

operations worldwide. While complying with the

Sumitomo Chemical's technologies, including those using direct oxidation processes to produce methyl methacrylate (MMA) monomer and vapor deposition processes to produce polypropylene, are making substantial contributions to environmental protection by enabling energy and resource conservation both in Japan and abroad. In particular, the Company is using these technologies at its petrochemical complex and acrylic acid and MMA plant in Singapore and its polypropylene plant in the United States.



This test plant uses new technologies to improve the stability and efficiency of biological processes.

## International Network





Agricultural chemicals manufacturer in India, SC Enviro Agro India

In April 2000, Sumitomo Chemical established an agricultural chemical production business in India. In line with its safety policy, the Company conducted a safety inspection based on the Safety Management Guidelines and began operations only after ensuring the safety of all facilities.

# Environment-Friendly Product Lineup

# Water

Sumitomo Chemical has not only installed comprehensive water purification systems to treat wastewater discharged from its own plants but also makes full use of its excellent capabilities for the development of diversified technologies and products that are helpful in preventing water contamination.



## 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

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.

#### **Dyestuffs**

#### ■ 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 metal-complex acid dyes, which contain heavy metals harmful to the environment and 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.



Agents for water purification



Environment-friendly dyes

# The Green Mother Earth

Sumitomo Chemical is making a significant contribution to the coexistence and coprosperity of humankind and the Earth through its agricultural products and greenification technologies.



Lano Tape



Environment-friendly coated fertilizers

### Agricultural and Greenification Products

#### ■ Agricultural and household pesticides

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 our 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 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 resistant insect pest that feeds on fruits, vegetables, and plants. However, this method is rather ineffective during late autumn and early spring, when orius sauteri is 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.

#### ■ 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 integrated pest management.

#### ■ 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.

#### ■ Irrigation system products: Sumidrip, Sumisansui 1

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

<sup>1</sup> Marketed by the Company's subsidiary Sumika Agrotech Co., Ltd.

# Daily Life

Sumitomo Chemical offers environment-friendly products for use in everyday life.



Dioxin-absorbant film used in garbage bags



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

# **Environmental Products for Household Applications**

#### ■ Suiaru-Power dioxin-absorbant film <sup>2</sup>

Sumitomo Chemical has developed *Suiaru-Power* dioxin-absorbant 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 bags<sup>3</sup> and functional papers<sup>4</sup>, is under way.

#### ■ Sevix 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.

#### ■ 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-Patacon foldable box 5

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

# ■ Sunply polypropylene double-wall sheet and Sumipanel thick hollow panel <sup>5</sup>

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

#### ■ Sumithermal floor-heating system 5

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.

# ■ Esprene VH-SPO synthetic rubber with enhanced processing capabilities

With low hardness and excellent processing capabilities, this environment-friendly synthetic rubber can even be made into hoses and tubes, which are difficult to produce with conventional synthetic rubber.

#### ■ Excellen FX environment-friendly, high-capability plastomer

Sumitomo Chemical's proprietary technologies enable 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.

#### ■ Super Engineering Plastic Sumikasuper and Sumikaexcel

Sumikasuper, an aromatic polyether, 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 fire retardant (UL Standard V-0) available.

- <sup>2</sup> Marketed by NIHON GREENPACKS Co., Ltd.
- <sup>3</sup> Marketed by Hakugen Co., Ltd.
- <sup>4</sup> Marketed by The Pack Corporation
- <sup>5</sup> Marketed by the Company's subsidiary Sumika Plastech Co., Ltd.

# Recycling

Sumitomo Chemical is contributing to the transformation from an era of mass production and consumption to the new age of recycling through the development of suitable technologies and products.



# **Recycling-Related Products**

#### ■ Katawork 5 polypropylene panels

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

#### ■ Sumitomo TPE polyolefinic thermoplastic elastomer

Sumitomo TPE polyolefinic thermoplastic elastomer, a polyolefinic speciality resin, is currently experiencing a rapid increase in demand from such industries as automotive 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, Klinalpha<sup>5</sup> polyolefin agricultural films

Klintate and Klinalpha are special polyolefin films for agricultural use. After use, they can be used as fuel material or easily 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 polyethylene terephthalate (PET) 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 (methyl methacrylate) resin for large-scale blow and foam molding

Sumitomo Chemical's technology has enabled MMA 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.

<sup>5</sup> Marketed by the Company's subsidiary Sumika Plastech Co., Ltd.



Katawork polypropylene molding panels contribute to environmental protection.

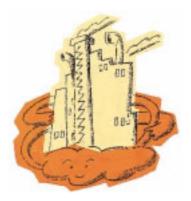


IGETABOND facilitates the recycling of PET bottles.

# Sustainable Chemistry

The terms Sustainable Chemistry and Green Chemistry have become familiar throughout the world. These catchphrases refer to the chemical technologies that reduce or eliminate the output and use of raw materials, chemical products, or by-products that are harmful to the environment and human health.

Sumitomo Chemical has vigorously engaged in introducing sustainable chemistry into its operations. The Company has undertaken the development of energy-efficient and resource-saving processes to control CO<sub>2</sub> emissions and other materials that contribute to global warming. At the same time, the Company is actively working to develop processes that can reduce the burden on the environment and lessen environmental impact on air and water.



# Sustainable Chemistry



Resorcinol manufacturing technology developed using Sumitomo Chemical's proprietary technology

#### Low environmental impact process development

Sumitomo Chemical has succeeded in developing manufacturing processes that have a low environmental impact by eliminating the quantity of hazardous material produced.

■ Direct oxidation process for 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 processes, and plant growth regulators



Developing a new process

# Reduction of CO<sub>2</sub> emissions through lower energy consumption

Sumitomo Chemical has developed many manufacturing processes over the years. To name a few, the Company has excellent processes for manufacturing isobutylene, gas-phase polypropylene, and gas-phase linear low-density polyethylene, all of which improve energy consumption and contribute to reduced CO<sub>2</sub> emissions. In addition, the Company has been working to develop a bioreactor that enables the replacement of traditional chemical reactions that require higher temperatures and higher pressures. Sumitomo Chemical has already yielded significant results by applying this process to the manufacture of active ingredients for household insecticides.

- Isobutylene manufacturing facilities
- Gas-phase polypropylene manufacturing facilities
- Gas-phase linear low-density polyethylene manufacturing facilities
- Bioreactors



## **Environmental Impact Reduction**

#### ■ Gas-phase technology for caprolactam production

Using proprietary catalysts, Sumitomo Chemical has successfully developed a compact and highly efficient process for the production of caprolactam, a raw material used to make nylon. Unlike conventional caprolactam production processes, this new technology produces caprolactam without generating ammonium sulfate as a by-product by combining new processes from Sumitomo Chemical and the Italian petrochemical company EniChem. Thus, it helps conserve energy and is environmentally friendly.

### ■ Revolutionary new process for propylene oxide production

Using high-performance proprietary catalysts, Sumitomo Chemical has developed a compact process to manufacture propylene oxide—a raw material used to make polypropylene glycol for use in polyurethane foam, etc.—that generates no by-products, conserves energy and resources, and has strong market potential.

#### ■ Oxidation technology for hydrochloric acid

Using proprietary catalysts, Sumitomo Chemical has developed a technology for oxidizing hydrochloric acid that is more efficient than conventional technologies.

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

#### ■ Technology for recovering crude gallium

Sumitomo Chemical is the world's top producer of high-purity gallium, the demand for which is increasing in the electronics materials industry. The Company's technology recovers crude gallium from dissolved bauxite liquor. Generally, only alumina is recovered from the liquor and the rest is disposed of as waste materials. This technology does not require the use of organic solvents and thereby minimizes environmental impact.

### Supporting Environmentally Sound Agricultural Practices

In April 2001, Sumitomo Chemical established Nihon EcoAgro Co., Ltd., to support environmentally sound agricultural practices.

The Japanese Food Recycling Law was enacted in May 2001 to ensure that kitchen and other food waste is broken down into reusable resources. In accordance with this law, Nihon EcoAgro will work together with supermarkets, restaurant chains, and other companies discarding large amounts of agricultural and seafood waste by collecting the waste and introducing beneficial fungi to produce high-quality compost and organic fertilizer. Nihon EcoAgro will supply this compost and fertilizer to organic farmers and farmers using minimal amounts of chemicals. In addition, the company will act as an intermediary between these farmers, who are eager to open new sales channels for their products, and supermarkets and restaurant chains, which need stable, large-scale sources of organic produce and low-chemical products and fertilizers.

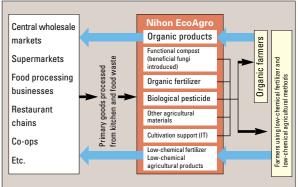


Pilot facility for caprolactam production



Gallium is used as a substrate material in mobile phones.

# Conceptual Outline of Nihon EcoAgro's Business Activities



**Sumitomo Chemical makes every effort to preserve** the safety of the environment in the neighboring communities around its works.

The Company has introduced numerous environmental protection measures. It also maintains efficient environmental monitoring systems and keeps chemical firefighting engines and other equipment in the event of an accident.

The Company's corporate objectives are to develop Sumitomo Chemical in tandem with the communities in which the Company operates. As a good corporate citizen, the Company will continue to promote and cooperate in local community activities.



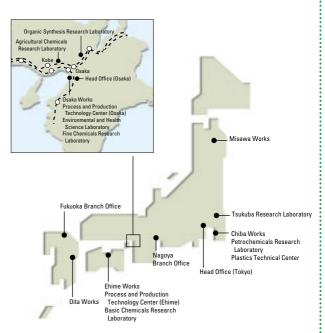
### JCIA Safety Award (May 2001)



Kazuo Kan, General Manager, Sumitomo Chemical Misawa Works

Akio Kosai, Chairman of JCIA

# Domestic Operations



In June 2001, Sumitomo Chemical underwent a pilot inspection conducted by the Japan Responsible Care Committee (JRCC). This inspection targeted the following three—out of a total of seven—codes of management practices: the Management System Code, the Environmental Protection Code, and the Disaster Prevention Code.

## **Company Outline**

Sumitomo Chemical's origins date back to 1913, to a copper mine in Besshi, Ehime Prefecture. Sulphuric acid gas generated while smelting the copper produced there was a major environmental problem at the time. To overcome the problem, a process was developed to manufacture calcium superphosphate by using the gas. Thus, Sumitomo Chemical started its business as a fertilizer producer. Since its beginning, Sumitomo Chemical has been conscious of quality, environmental, and safety issues.

Business founded: September 22, 1913

Commenced business operations: October 4, 1915

Company incorporated: June 1, 1925 Capital: ¥89,699 million at March 31, 2001

Number of employees: 5,409 at March 31, 2001

Divisions: Basic Chemicals Sector

Petrochemicals & Plastics Sector

Fine Chemicals Sector

Agricultural Chemicals Sector

#### Independent Review Report on the "Environment, Health & Safety Report 2001 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 2001 Responsible Care Activities of Sumitomo Chemical Company, Limited" (the "EHS Report") of Sumitomo Chemical Company, Limited (the "Company") for the year ended March 31, 2001. 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 first 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.
- ② 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 the Company's factories, 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.
- 2 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 & Co.

(Member Firm of Andersen Worldwide SC)

Osaka, Japan October 15, 2001

# SUMITOMO CHEMICAL COMPANY, LIMITED

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# **Responsible Care**

As a Responsible Care company, Sumitomo Chemical undertakes voluntary activities in the areas of safety, health and the environment from the development through disposal of chemical substances. In Japan, the Responsible Care mark is used by companies that are members of the Japan Responsible Care Council.



