# **Environmental & Social Report 2008**

F

(April 2007-March 2008)



• SUMITOMO BAKELITE CO., LTD.

**02** Message from the President

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#### Editorial Policy

Sumitomo Bakelite Co., Ltd., has disclosed its environmental initiatives since the 1998 publication of the *Environmental Activities Report*, which became the *Environmental Report* in 2001. In 2005, we enhanced information on our social initiatives in the *Environmental & Social Report*.

Regarding the preparation of this 2008 version of the report,

- we have striven to prepare an easy-to-understand, easy-to-read style and format for readers,
- we have referred to the Ministry of the Environment's Environmental Reporting Guidelines (fiscal 2007 version), and
- since 2001, we have included an independent review to raise the report's credibility.

Use of the J-SUS mark is granted based on the results of the review of an independent assurance provider. This mark indicates that the reliability of the sustainable information contained in our *Environmental & Social Report 2008* meets the standards established by The Japanese Association of Assurance Organizations for Sustainable Information (J-SUS; http:// www.j-sus.org/) for granting an

assurance and registration mark.

# Scope of Environmental & <u>Social Report 20</u>08

#### Period

Fiscal 2007 (April 2007 to March 2008) Some activities mentioned in the report include those undertaken in fiscal 2008.

#### Business Sites

- Sumitomo Bakelite Co., Ltd. Amagasaki Plant
  - Kanuma Plant

  - Nara Plant
  - Shizuoka Plant (including subsidiaries and consolidated
  - affiliates on the premises)
  - Industrial Resin & Molding
  - Compounds Plant
  - Utsunomiya Plant
- Tsu Plant
- Fundamental Research Laboratory Kobe Fundamental Research
- Laboratory Akita Sumitomo Bakelite Co., Ltd.
- Artlite Kogyo Co., Ltd. S.B. Techno Plastics Co., Ltd. Hokkai Taiyo Plastic Co., Ltd. Yamaroku Kasei Industry Co., Ltd. Kyushu Bakelite Industry Co., Ltd. Suzuka Plant, Decolanitto Co., Ltd. Kyodo Co., Ltd. Y-Techs Co., Ltd.
- Please refer to page 15 for information on
- overseas subsidiaries.



# Sumitomo Bakelite is aiming to be a Global Excellent Company in the functional chemical product field based on full participation by all members of the Sumitomo Bakelite Group.

More than a century of history has passed since 1907, when the plastics industry manufactured the world's first Bakelite products. During that period, Sumitomo Bakelite has been a plastic product manufacturing pioneer that has made important contributions to the plastics industry's progress. While plastics products were initially only used as materials with electricity-insulating properties, they have come to be used in a diverse range of applications—such as information and communication products, electronics, automobiles, medical therapy products, and foodstuffs—and thereby play crucial roles in modern lifestyles.

To enable the future realization of a sustainable "low-carbon society," it is important to devise ways to provide greater functionality while using fewer resources. By creating plastics with moresophisticated functions and creating additional customer value, the Sumitomo Bakelite Group is aiming to contribute to society and promote its own realization of sustainable corporate growth.

# In accordance with its fundamental management policies, Sumitomo Bakelite strives to live up to the trust and expectations of its stakeholders while promoting its own sustainable development and making important contributions to the natural environment and society.

Sumitomo Bakelite's management policy is, "We value trust and maintain steadiness. Based on this, we strive through our business activities to make contributions to social progress and improvements to quality of life worldwide." In accordance with this policy, we have set ourselves the core management objective of ensuring our management is "highly compatible with society and the environment." These concepts serve as key guides for the operations of Sumitomo Bakelite Group companies based in 15 countries around the world, and we make relentless efforts to ensure that the concepts are comprehensively and thoroughly implemented. In addition, we are endeavoring to further increase the rigor of our corporate governance systems.

# By means of our total-participation-type programs to strengthen the Sumitomo Bakelite Production System (SBPS) and our quality assurance systems, we are creating safe workplaces that supply products and services that provide customers with satisfaction and peace of mind.

Sumitomo Bakelite is striving to use the SBPS, based on the Toyota Production System, to ensure that the creations of its marketing and R&D units are utilized in waste-free business operations. Moreover, we are concertedly moving forward with measures to reevaluate and strengthen our quality assurance systems, which are integrated systems with failure mode and effect analysis (FMEA), individual process quality assurance, quality monitoring, and other functions covering all operations from product planning through sales.

At manufacturing sites, in addition to providing rigorous employee training, we undertake risk assessments in line with the "machinery fundamental safety design" concept and then move ahead with the creation of workplaces that are safe and also facilitate work processes.

### We are fostering the development of "human assets."

Aiming to develop human assets that understand our management policy and can autonomously help us realize sustained business growth, we began operating the SB School as an inhouse educational unit from September 2007. All kinds and levels of Sumitomo Bakelite employees now attend the facility, which is implementing and expanding its array of courses on such subjects as compliance, human rights, occupational safety, quality assurance, and the environment.

#### In conclusion

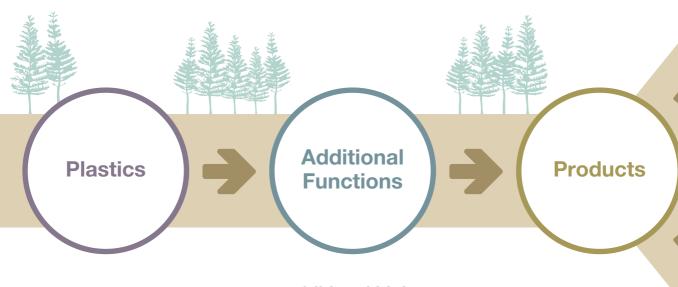
In accordance with the Responsible Care concept the chemical industry is promoting worldwide, Sumitomo Bakelite is making relentless efforts to minimize the environmental, safety, and health impact of all its operations and products—from product development and manufacturing through product use and disposal or recycling. Reflecting these endeavors, our sales of "environment-conscious" products that help reduce energy consumption and have minimal environmental impact have risen to 26.6% of net sales in fiscal 2007, compared to 20.7% in fiscal 2004. We are very pleased to note our customers' increasing awareness of the initiatives we have been taking in connection with such environment-conscious products.

We hope the *Environmental & Social Report 2008* will give readers a good understanding of the Sumitomo Bakelite Group's stance and its efforts in this area. We hope for your continued understanding and support.

September 2008 Tomitaro Ogawa, President



- Sumitomo Bakelite is contributing
- to the environment and society by
- giving plastics additional functions
- and providing improved products.



# **Giving plastics**

Sumitomo Bakelite uses phenolic resins, epoxy resins, and other thermoset resins as well as polyethylene resins, polypropylene resins, and other thermoplastic resins.

# additional highperformance functions that customers desire

Customers desire diverse functions. Sumitomo Bakelite works with customers from the early R&D stages to develop plastics so that it can supply products that precisely satisfy customer requirements.

# to create environmentconscious products

We strive to develop and market products that do not contain dangerous or harmful substances, do not require customers to use such substances, contribute to the conservation of resources and energy, and make it easy to recover and recycle resources.

# Electronics Field

(Semiconductors, display materials, materials for circuitry, and electronic components)





**Epoxy Molding Compounds for Semiconductors** 

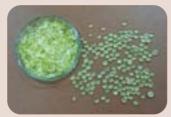
Sumitomo Bakelite markets epoxy resin molding materials for semiconductor sealing that are free of bromineand antimony-based flame retardants and conform with global environmental standards, such as the SUMIKON<sup>®</sup> EME G700 series for applications that require high reliability and the SUMIKON<sup>®</sup> EME G600 series for ordinary semiconductor package applications. (SUMIKON<sup>®</sup> EME)

# **Electric Circuit Board Materials**

Sumitomo Bakelite markets environment-conscious halogen- and antimony-free laminates, which are used in electric circuit boards for electronic devices, ranging from paper phenol materials for one-sided boards to materials for semiconductor package substrates. (SUMILITE® PLC, ELC, and BL  $\alpha$  "Green" Laminates)

Automotive Field (High-performance plastics)





# Phenolic Resin Metal Alternative Molding Compounds

Our compounds have enabled the plasticization of metal automobile components, thereby contributing to lighter automobiles, lower fuel costs, and reduced CO<sub>2</sub> emissions. The Company also proactively works to recycle hardened materials. (SUMIKON<sup>®</sup> PM)

# **Industrial Phenolic Resins**

Sumitomo Bakelite markets environment-conscious phenolic resins that do not contain substances restricted by principal environmental laws and regulations. These include low-monomer, completely water soluble resins that do not contain unreacted monomers or organic solvents as well as dust-free powder resins that generate low levels of dust. (SUMILITERESIN® PR)

# Life and Medical Field (Quality of life products)





### **Co-Extruded Films**

Unlike dry laminates, Sumitomo Bakelite has developed films that do not use solvents by combining a variety of resins to form multilayered films through co-extrusion. As a result, we have been able to develop thinner films that help reduce packaging material waste. (SUMILITE® CEL)

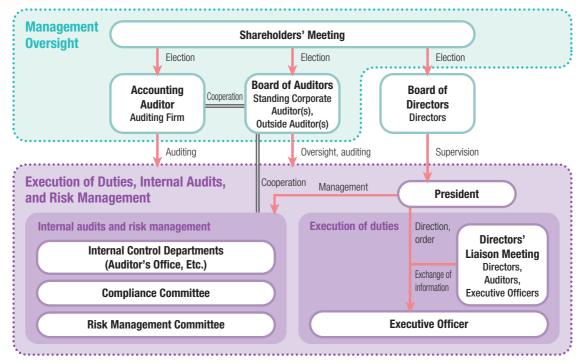
# Portable, Sustained Low-Pressure Aspiration Device for Medical Use

Sumitomo Bakelite has realized a device that facilitates the easy and safe drainage of bodily fluids following surgery. We have succeeded in reducing product and packaging size and weight, thereby decreasing the generation of waste products. (**SUMIUS** SB VAC SLIM<sup>®</sup>) We will further improve our relationship with society by making additional efforts to enhance corporate governance, compliance, and risk management.

#### **Strengthening Corporate Governance**

We at Sumitomo Bakelite Co., Ltd., recognize that improving transparency and our relationship with society is fundamental to corporate governance. The Company's philosophy is to value the trust and maintain the steadiness. Based on this, we strive through our business activities to make contributions to social progress and improvements to quality of life worldwide and are taking steps to further improve corporate governance.





#### Basic Policy Regarding Internal Control System Establishment

At the Board of Directors' meeting held on May 9, 2006, a basic policy on the establishment of internal control systems was adopted pursuant to Japan's Company Law. At a Board of Directors' meeting held on April 30, 2008, a portion of this basic policy was amended. For more information, please refer to our corporate website (http://www.sumibe.co.jp/english/company/controlp.html).

Regarding financial statement related internal control evaluation and auditing based on the internal control reporting system introduced by Japan's Financial Instruments and Exchange Law, we have begun full-scale use of such evaluation and auditing processes during the current fiscal year (April 2008 through March 2009).

#### **Rigorous Compliance**

Sumitomo Bakelite promotes management with an emphasis on compliance in recognition of the fact that adhering to laws and corporate ethics is a crucial component of business activities.

We endeavor to ensure that all the individuals constituting the Company are sufficiently informed regarding Our Standards of Conduct, an employee conduct code to which each and every employee must adhere in conducting business activities. Also, we are moving forward with compliance initiatives led by the Compliance Committee. In addition, similar initiatives are being implemented at all Group companies to ensure uniform operations, and our affiliates, including those overseas, are in the process of establishing codes of conduct based on Our Standards of Conduct.

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#### Our Standards of Conduct

To further familiarize employees and ensure compliance with corporate ethics, Sumitomo Bakelite has established an employee conduct code called Our Standards of Conduct and distributes this in a booklet to all employees.

#### Our Standards of Conduct

- 1. We play an important, beneficial role in our society, offering customers products and services that put customer satisfaction first.
- 2. We strive to improve the performance of the Sumitomo Bakelite Group, always taking a global perspective.
- 3. We adhere to our corporate ethics, complying with legal requirements and our bylaws both in Japan and abroad, while engaging in fair and transparent business activities.

**Compliance Committee** 

Compliance Committee Chairman

**Compliance Committee Members** 

Compliance Committee Secretary General Affairs and Corporate Legal Department

Compliance

Committee Vice-Chairman **On-Site Compliance** 

Committee

- 4. We emphasize safety while independently engaging in environmental protection activities.
- 5. We strive to create a pleasant work environment through respect for individual personalities and human rights.
- Note: The booklet includes what we should strive for as well as specific modes of behavior related to each item.

#### The Sumitomo Bakelite Compliance System

To promote compliance, Sumitomo Bakelite has established its Compliance Committee, which is responsible for assessments of compliance levels and, when necessary, related improvements as well as education and training.

#### Compliance Situation

In addition to audits of business operations conducted by its Audit Office, Sumitomo Bakelite implements internal audits with

respect to various fields, such as environmental audits, product quality audits, and safety audits. In addition, reports on compliancerelated issues are made at monthly meetings of the Compliance Committee. Through these activities, we have confirmed our compliance situation during fiscal 2007 and found that there were no major legal or regulatory infractions. Similarly, there were no major human rights related infractions. As we reported in *Environmental & Social Report 2007*, our autonomous environmental study confirmed soil and groundwater pollution at a site owned by Sumitomo Bakelite subsidiary Sano Plastic Co., Ltd., following the dismantling of a factory building there, and we are currently implementing remediation measures at that site.

#### Reporting System

In cases where an employee discovers a compliance violation or suspects that there may have been a violation, and it is not appropriate to report the incident to his/her superior, he/she may directly report it to a designated contact point. In addition, employees can access designated external legal counsel to report the incident.



# Strengthening Risk Management

To prevent all kinds of potential risks from becoming actual or to minimize unavoidable business losses, Sumitomo Bakelite has established its Risk Management Committee, which operates continuously with a Companywide scope.

In addition, in April 2008, we instituted our Basic Risk Management Regulations, which serve as the basic policy regarding the risk management of Sumitomo Bakelite and its Group companies, and we are currently working to implement on-target and precise management activities with respect to diverse kinds of risks.

#### Initiatives to Protect Personal Information

We recognize that the customer, shareholder, employee, and other personal information in our possession is important and must be protected, and therefore are committed to ensuring that this information will not be leaked to outside sources.

For more information about Sumitomo Bakelite's privacy policy, please refer to our corporate website (http://www.sumibe.co.jp/ english).

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# **Corporate Data**

- Name
   Sumitomo Bakelite Co., Ltd.
- President
   Tomitaro Ogawa
- Established January 25, 1932
- Major Products by Division

#### Semiconductor and display materials

Epoxy resin molding compounds

- for semiconductor packaging
- Liquid resin for semiconductors
- Carrier tape for semiconductor
- surface mounting
- Adhesive tape for semiconductor chips

#### Materials for circuitry and electronic components

- Epoxy resin copper clad laminates
- Phenolic resin copper clad laminates
- Flexible printed circuits

#### **High-performance plastics**

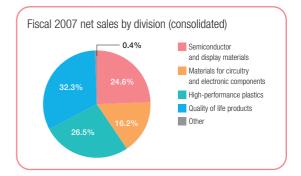
Phenolic resin molding compounds Industrial phenolic resins

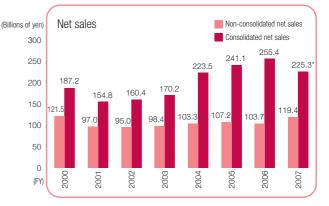
Precision molded products

#### Quality of life products

- Medical devices
- Vinyl resin sheets
- Multilayer sheets
- Melamine resin decorative laminates
- Polycarbonate resin boards
- Vinyl resin boards
- Acrylic styrene resin boards
- Water treatment products

- Capital (As of March 31, 2008)
   ¥37.1 billion
- Number of Shareholders (As of March 31, 2008) 18,809
- Number of Employees (As of March 31, 2008)
   2,853 (non-consolidated)
   8,833 (consolidated)
- Net Sales (Fiscal 2007)
   ¥119.4 billion (non-consolidated)
   ¥225.3 billion (consolidated)





\* Previously, the consolidated accounting period for overseas subsidiaries was the period from April through March, but—to respond to the change to a new accounting system and increase the speed and accuracy of financial reporting—this period has been changed, beginning from fiscal 2007, to the period from January through December. Consequently, the fiscal 2007 consolidated accounting period for all overseas subsidiaries other than those based in the United States was a transitional ninemonth period from April 2007 through December 2007. The Sumitomo Bakelite Group has set environmental targets based on environmental and safety management policies in line with its basic policy of "society and environment-compatible management."

### Management Policies

- Strengthen and expand three core businesses

   —semiconductor materials and electronic circuit products, high-performance plastics, and quality of life products
- 2. Enhance customer satisfaction (CS)
- 3. Augment consolidated management systems through measures that include those to increase internationalization
- Establish management that is highly compatible with society and the environment

### **Corporate Policies for Safety, Health, and the Environment**

#### Philosophy

In all its operations, Sumitomo Bakelite will endeavor to carry out its social responsibilities by meeting the highest standards of the Responsible Care concept and giving due consideration to human health and safety as well as to the protection of the environment.

#### **Policies**

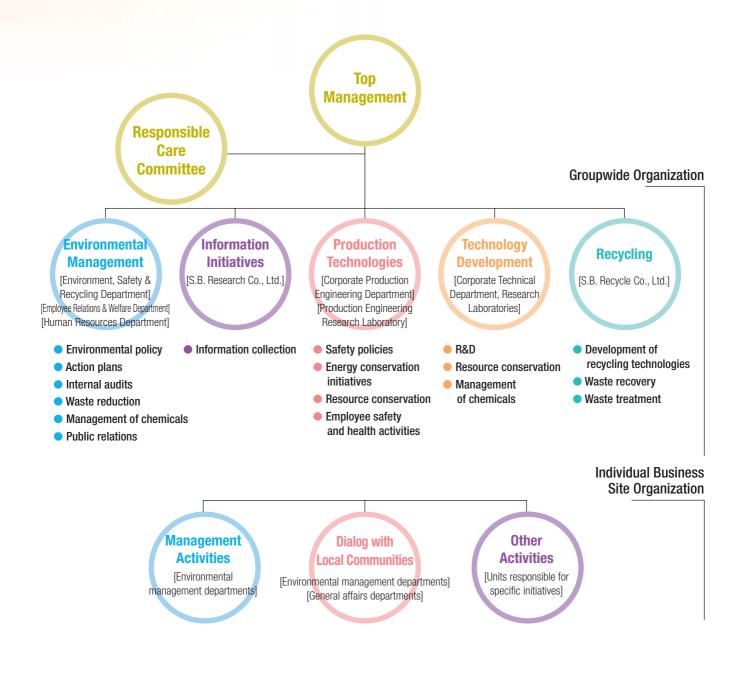
In accordance with this philosophy, we will:

- Evaluate the safety, health, and environmental aspects of all corporate activities, from product design through product disposal, strive to minimize the environmental impact of our corporate activities, and undertake to develop safer products and technologies;
- 2. Make sustained, Groupwide efforts to promote resource and energy conservation, recycling, and waste reduction;
- **3.** Perform environmental audits and safety audits as well as work to maintain and improve systems for managing environmental protection, safety promotion and disaster prevention, and occupational safety and health;
- 4. Comply with all relevant laws, regulations, and agreements associated with safety, health, and the environment while autonomously establishing administrative rules designed to promote safety, health, and environmental protection;
- 5. Work to improve the safety of raw materials, products, and transportation operations and provide product safety information to employees, customers, and others;
- 6. Implement operational safety management programs to ensure the safety and health of employees and residents of local communities; and
- 7. Publicly disclose information to and promote dialogue with employees and residents of local communities.

# Organization for protecting the environment and ensuring safety and health

The Sumitomo Bakelite Group's Responsible Care\* operations are carried out by a Groupwide organization centered on the Head Office's Responsible Care Committee as well as an individual business site organization comprising each business site's environmental management departments, general affairs departments, and other departments responsible for specific initiatives.

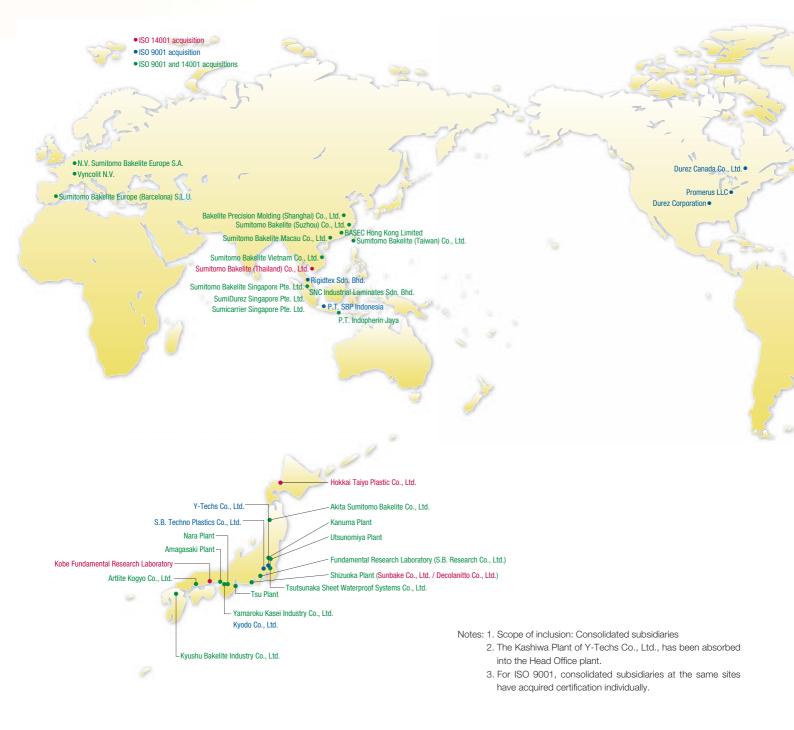
\* Responsible Care operations involve autonomous measures to ensure "environmental maintenance, safety, and health" regarding all chemical-related processes from development through manufacturing, distribution, usage, final consumption, and disposal as well as to publically announce the results of those measures and to undertake two-way communication with society regarding those measures.



# The Sumitomo Bakelite Group promotes the establishment of environmental management systems and acquisition of ISO 9001 and ISO 14001 certification.

As part of its Responsible Care activities, the Sumitomo Bakelite Group has been building environmental management systems based on ISO 14001 and promoting the acquisition of ISO 14001 certification. To date, 15 domestic business sites and 15 overseas business sites have acquired certification. In addition, aiming at maintaining and improving the quality of our products, and providing our customers with reassurance when using our products, we have been building quality management systems based on ISO 9001 and promoting the acquisition of ISO 9001 certification. To date, 17 domestic business sites and 19 overseas business sites have acquired certification.

Sites that were certified as of July 31, 2008, are indicated on the map below.



Sumitomo Bakelite strives to develop and offer products that do not contain dangerous or harmful substances, do not require customers to use such substances, contribute to the conservation of natural resources and energy, and make it easy to recover and recycle resources.

## SUMIRESIN EXCEL® CRM Semiconductor Die Attach Paste

This product family of highly reliable die attach pastes for the high mounting temperatures required for lead-free solder includes the SUMIRESIN EXCEL® CRM 1076 series and 1033 series for lead frame packages, as well as the SUMIRESIN EXCEL® CRM 1500 series for area mounted packages. In addition, recently launched series include the CRM-1710 and CRM-1720 series, which are die attach pastes that harden quickly, and the CRM-1790 series, which is a good substitute for solder die attach materials because of its superior heat-conduction properties.



### SUMIRESIN EXCEL<sup>®</sup> CRC Wafer Coating Material

To respond to narrowing circuit widths required due to the sharp increase in semiconductor memory capacity as well as higher speeds and to satisfy strict demands for reliability, Sumitomo Bakelite has developed and marketed the SUMIRESIN EXCEL® CRC 8000 series of positive photosensitive wafer coating resins. This enables semiconductor manufacturers to use alkaline water as developing fluid and pure water as a rinsing solution, rendering special solvents unnecessary. In addition, with certain wafer level packages, it can be used in place of conventional plastic-

based sealants for rewiring, reducing the length of processing, and thus conserving resources and energy.

#### SUMIRESIN EXCEL® CRP Liquid Epoxy Resin for Semiconductors

SUMIRESIN EXCEL® CRP is an underfill resin for lead-free solder that increases the reliability of flip-chip connections. Underfill resin fills in the area between the base and chip in lead-free soldering—the mechanical strength of which is inferior to conventional solder—to provide adequate protection and hardness, vastly improving connection stability throughout temperature cycles and in other severe environments to enable more fluid work processes.

# LOC Adhesive Film SUMILITE® ITA Semiconductor Adhesive Film/Semiconductor Adhesive Film SUMILITE® IBF

LOC adhesive film SUMILITE® ITA and the Semiconductor Adhesive Film IBF3000 series boast higher heat resistance than conventional adhesive films and have been developed and marketed as semiconductor adhesive film products that are compatible with lead-free soldering reflow. In addition, Sumitomo Bakelite has developed the Dicing Die Attach Film IBF8000 series, which enables adhesion at low temperatures and thus process simplification, which, in turn, facilitates resource and energy conservation through the shortening of manufacturing processes.

#### SUMILITE® TFP Flexible PCBs

In addition to epoxy laminates used for flexible copper-clad boards and cover lays, Sumitomo Bakelite has developed and offers flexible printed circuit boards (PCBs) free of halogen and antimony compounds as well as flexible PCBs that use lead-free plating for use in packaging and flexible PCBs that use gold plating for use in connector terminals. Furthermore, we have developed and offer multilayer flexible PCBs free of halogen and lead.









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### SUMILITE® CSL Semiconductor Cover Tape for Electric and Electronic Components

This cover tape developed and sold by Sumitomo Bakelite protects electric and electronic components from static electricity by adding electrical conductivity to the layer the carrier tape is adhering to. In addition, it is an environment-conscious, halogen-free product.

#### SUMILITERESIN<sup>®</sup> ECP for Electronic Components

To reduce environmental impact, Sumitomo Bakelite has developed and marketed an epoxy coating powder (ECP) that does not contain dangerous azo compounds, which generate harmful amine. We also have developed and marketed ECP products for electronic components, including those that are free of halogen and antimony and offer both UL fire resistance and long-term stability. Moreover, we are moving forward with the development of a motor slot insulation-use ECP that improves the coating environment by generating less dust during the coating process as well as an ECP that does not require wastewater treatment, unlike electrodeposition paint, and also allows for consistently uniform thin-layer coating.

### SUMIMAC<sup>®</sup> ECR Liquid Epoxy Resin for Electric and Electronic Components

Sumitomo Bakelite offers a sealant-use liquid ECR for lead-free solder surface-mounted devices and a halogen- and antimony-free liquid ECR with UL fire resistance. The Company also markets a two-liquid-type ECR that hardens at room temperatures and a single-liquid-type ECR that hardens at a relatively low temperature (80°C). In addition, we are moving ahead with the development of an energy-saving two-liquid-type ECR for the injection molding of ignition coils for automobiles and other equipment with heat-hardening periods shrunk to half or less the length of previous products' heat-hardening periods.

#### P-Plus<sup>®</sup> Freshness Maintenance Film

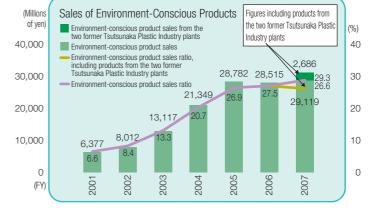
P-Plus® freshness maintenance film is manufactured and sold by Sumitomo Bakelite to preserve the quality of produce during distribution and storage. P-Plus® helps reduce loss due to produce spoilage at each stage of distribution by preserving quality. It also contributes to reducing environmental impact by reducing the number of shipments to stores and facilitating the use of cardboard boxes and containers, which are easier to recycle than polystyrene containers.

#### SUNLOID<sup>®</sup> Industrial-Use Series PVC Plates

To reduce environmental impact, Sumitomo Bakelite's SUNLOID® Industrial-Use Series (SUNLOID® ANGAA Plates, SUNLOID® Industrial-Use Plates, SUNLOID® Heat-Resistant Plates, KAIDAKU® Industrial-Use Plates, SUNLOID® EREKON Plates, etc.) do not contain lead-based stabilizing agents. They are strong-selling, corrosion-resistant industrial-use materials used in diverse applications.

# Growth in Sales of Environment-Conscious Products (Including Those Described on Page 4)

The integration of Sumitomo Bakelite and Tsutsunaka Plastic Industry Co., Ltd. (Kanuma Plant and Nara Plant) expanded Sumitomo Bakelite's array of environmentconscious products from July 2007. Accordingly, we are presenting two sets of environment-conscious product sales data for fiscal 2007-one including the products of the two former Tsutsunaka Plastic Industry plants and one excluding those products.













Sumitomo Bakelite has been working Groupwide to reduce its environmental impact since fiscal 2000 with the establishment of medium- and long-term targets based on the Company's Corporate Policies for Safety, Health, and the Environment, using fiscal 1999 as the base year.

# Medium- and Long-Term Environmental Impact Reduction Targets

Waste generation: 35% reduction (to be achieved by fiscal 2010)

- Zero-emissions-designated substances: 99% reduction (to be achieved by fiscal 2010)
- Air emissions of solvents and other chemical substances: 95% reduction (to be achieved by fiscal 2010)
- CO<sub>2</sub> emissions: 10.0% reduction (to be achieved by fiscal 2010)

Definitions: Waste generation: Aggregate volume of industrial and general waste from business sites

Zero-emissions-designated substances: Aggregate volume of landfill and incinerated waste without energy recovery

Air emissions of solvents and other chemical substances: Emissions of solvents and other chemical substances targeted by the Japan Chemical Industry Association (JCIA) Pollutant Release and Transfer Register (PRTR) assessments (including substances targeted for reporting pursuant to the PRTR Law)

 $CO_2$  emissions:  $CO_2$  emissions due to energy (fuel and electricity) used in business activities, such as production and research

Medium-term targets have been revised based on consideration of actual performance in fiscal 2007 and a reassessment of the outlook.

# **Environmental Impact Reduction Performance and Targets**

Action	Unit	1999 (base year) performance	2006 performance	2007 performance	2008 plan	2009 target	2010 target
Waste generation	Tons	12,800	11,317 (12% reduction)	10,017 (22% reduction)	9,180 (28% reduction)	8,721 (32% reduction)	8,285 (35% reduction)
Zero-emissions-designated substances	Tons	7,053	287 (96% reduction)	227 (97% reduction)	119 (98% reduction)	83 (99% reduction)	58 (99% reduction)
Air emissions of solvents and other chemical substances	Tons	3,164	400 (87% reduction)	317 (90% reduction)	206 (93% reduction)	158 (95% reduction)	150 (95% reduction)
CO <sub>2</sub> emissions	Tons	130,769	134,785 (3.1% increase)	122,559 (6.3% reduction)	120,307 (8.0% reduction)	119,000 (9.0% reduction)	117,692 (10.0% reduction)

Notes: 1. Numbers in parentheses are rates of reduction or increase based on fiscal 1999 levels.

2. CO2 emissions are calculated based on the Law Concerning the Promotion of Measures to Cope with Global Warming.

Environmental impact figures are compiled from data from the following business sites:

Sumitomo Bakelite Co., Ltd.: Amagasaki Plant, Kanuma Plant (included from 2006), Nara Plant (included from 2006), Shizuoka Plant (including subsidiaries and consolidated affiliates on the premises), Industrial Resin & Molding Compounds Plant, Utsunomiya Plant, Tsu Plant, Fundamental Research Laboratory, and Kobe Fundamental Research Laboratory

Akita Sumitomo Bakelite Co., Ltd., Artlite Kogyo Co., Ltd., S.B. Techno Plastics Co., Ltd., Hokkai Taiyo Plastic Co., Ltd., Yamaroku Kasei Industry Co., Ltd., Kyushu Bakelite Industry Co., Ltd., Suzuka Plant of Decolanitto Co., Ltd. (included from 2004), Kyodo Co., Ltd. (included from 2006), Y-Techs Co., Ltd. (included from 2006), and Sano Plastic Co., Ltd. (included through June 2002)

Each year, Sumitomo Bakelite sets specific targets for reducing its

environmental impact, evaluating them on a monthly basis. The chart

below shows fiscal 2007 targets and actual performance.

				(Tons)	
Action	2006 performance	2007 target	20 perforr		Comments
Waste generation	11,317	10,126	10,017	Target attained	The planned target was attained, reflect- ing such factors as our realization of more progress than planned regarding solvent recovery at the Utsunomiya Plant and Kyushu Bakelite Industry Co., Ltd.
Zero-emissions- designated substances	287	220	227	Target not attained	The target was not attained, by a slight margin, although noteworthy progress in resource recycling at the Suzuka Plant of Decolanitto Co., Ltd., and at S.B. Techno Plastics Co., Ltd., enabled a year-on- year reduction of 60 tons. Moreover, an additional three business sites were clas- sified as zero-emissions sites based on our in-house classification system.
Air emissions of solvents and other chemical substances	400	280	317	Target not attained	The target was not attained, although the consolidation of production processes associated with solvent emissions and the effective operation of exhaust gas processing facilities enabled a year-on-year reduction of 83 tons.
CO <sub>2</sub> emissions	134,785	132,845	122,559	Target attained	We achieved our target through such measures as a boiler fuel switch from heavy oil to utility gas at both the Shizuoka and Utsunomiya plants.

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In fiscal 2003, Sumitomo Bakelite began collecting data on the environmental impact of overseas production bases with an eye to making reductions. To this end, it has established medium- and long-term environmental targets and is tracking its progress using fiscal 2004 as the base year.

# Medium- and Long-Term Environmental Impact Reduction Targets

Waste generation: 31% reduction (to be achieved by fiscal 2010) Zero-emissions-designated substances: 35% reduction (to be achieved by fiscal 2010) CO<sub>2</sub> emissions: 2.4% reduction (to be achieved by fiscal 2010)

We have established three environmental target areas: (1) waste generation, (2) zero-emissions-designated substances (landfill and incinerated waste without energy recovery), and (3)  $CO_2$  emissions. In view of the performance for fiscal 2007 and future production volume forecasts, we have revised our environmental targets.

# **Environmental Impact Reduction Performance and Targets**

Action	Unit	2004 performance	2006 performance	2007 performance	2008 plan	2009 target	2010 target
Waste generation	Tons	14,312	12,755 (11% reduction)	11,473 (20% reduction)	11,000 (23% reduction)	10,450 (27% reduction)	- ,
Zero-emissions-designated substances	Tons	13,023	11,182 (14% reduction)	9,928 (24% reduction)	9,413 (28% reduction)	8,942 (31% reduction)	8,495 (35% reduction)
CO <sub>2</sub> emissions	Tons	157,048	164,562 (4.8% increase)	167,220 (6.5% increase)	162,858 (3.7% increase)	157,972 (0.6% increase)	153,233 (2.4% reduction)

Notes: 1. Numbers in parentheses are the rates of reduction or increase compared with fiscal 2004 levels.

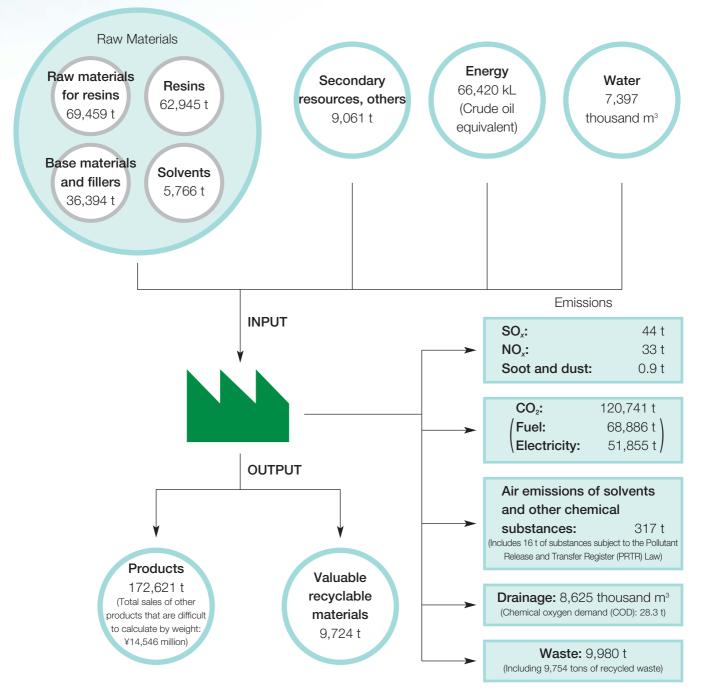
2. CO<sub>2</sub> emissions associated with electric power generation are calculated based on coefficients used by each relevant country or by individual power companies. Environmental impact figures are compiled based on data gathered from the following entities:

Sumitomo Bakelite Singapore Pte. Ltd., Sumicarrier Singapore Pte. Ltd., SumiDurez Singapore Pte. Ltd., SNC Industrial Laminates Sdn. Bhd., BASEC Hong Kong Limited, P.T. Indopherin Jaya, Sumitomo Bakelite (Suzhou) Co., Ltd., SB Flex Philippines, Inc. (included through December 2007), Sumitomo Bakelite (Taiwan) Co., Ltd., Bakelite Precision Molding (Shanghai) Co., Ltd., Rigidtex Sdn. Bhd., Durez Corporation, N.V. Sumitomo Bakelite Europe S.A., Sumitomo Bakelite Europe (Barcelona) S.L.U., Sumitomo Bakelite Vietnam Co., Ltd., Sumitomo Bakelite Macau Co., Ltd., Vyncolit N.V. (included from fiscal 2005), and P.T. SBP Indonesia (included from fiscal 2007)



The flowchart below illustrates the environmental impact of Sumitomo Bakelite's business activities.

The chart below shows inputs, including raw materials and energy, as well as outputs that are released into the environment. The Group is working to reduce its impact on the environment through waste reduction and resource conservation by promoting cutbacks on the use of raw materials, energy, and water.



Scope of compilation: Sumitomo Bakelite Co., Ltd.: Amagasaki Plant, Kanuma Plant, Nara Plant, Shizuoka Plant (including subsidiaries and consolidated affiliates on the premises), Industrial Resin & Molding Compounds Plant, Utsunomiya Plant, and Tsu Plant

Akita Sumitomo Bakelite Co., Ltd., Artiite Kogyo Co., Ltd., S.B. Techno Plastics Co., Ltd., Hokkai Taiyo Plastic Co., Ltd., Yamaroku Kasei Industry Co., Ltd., Kyushu Bakelite Industry Co., Ltd., Suzuka Plant of Decolanitto Co., Ltd., Kyudo Co., Ltd., and Y-Techs Co., Ltd.

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# Sumitomo Bakelite has adopted environmental accounting to promote efficient environmental management and fulfill its responsibility to society.

Sumitomo Bakelite implemented environmental accounting in fiscal 2000 to quantify the costs and benefits of environmental conservation and effectively promote environmental management as well as disclose information to stakeholders and give them an understanding of the Company's initiatives. Environmental accounting was introduced at five plants and the Company's two research laboratories in fiscal 2000 and, since fiscal 2001, has been successively implemented at affiliated companies in Japan, figures for which are included in data compilation.

The Company tabulates figures for environmental accounting based on the Ministry of the Environment's Environmental Accounting Guidelines (2005 version). Furthermore, the Group is working to develop its own accounting standards, with the view that environmental accounting is a means of quantitatively evaluating the progress of activities to reduce environmental impact. In addition, we review the standards every year to obtain more useful information through environmental accounting.

#### **Environmental Conservation Costs for Fiscal 2007**

	Environmental co	onservation costs	
Item	Investment (millions of yen)	Expenses (millions of yen)	Description
(A) Emissions control	165	303	<ul><li>Fuel switching for boilers</li><li>Installation of an exhaust gas processing facility</li></ul>
(B) Energy conservation	244	27	Installation of a high-efficiency boiler
(C) Waste reduction, recycling, and treatment	4	558	Waste treatment
(D) Product initiatives at the R&D stage	32	2,441	R&D for environment-conscious products
(E) Reduction of upstream and downstream environmental impact	_	26	<ul> <li>Analysis of environmental substances</li> <li>Commission fees to the Japan Containers and Packaging Recycling Association (JCPRA)</li> </ul>
(F) Environmental management activities	_	329	<ul> <li>Personnel expenses for environmental man- agement activities</li> <li>Beautification activities and maintenance of green spaces</li> </ul>
(G) Contributions to community activities	_	2	Outside communications activities
(H) Response to environmental damage	_	315	<ul> <li>Inspections of soil and groundwater contami- nation at vacant lot of Sano Plastic Co., Ltd., and implementation of associated and remedi- ation measures</li> </ul>
Total	445	4,001	

Notes: 1. Period: April 2007 to March 2008

2. Scope of compilation: Sumitomo Bakelite Co., Ltd.: Amagasaki Plant, Kanuma Plant, Nara Plant, Shizuoka Plant (including subsidiaries and consolidated affiliates on the premises), Industrial Resin & Molding Compounds Plant, Utsunomiya Plant, Tsu Plant, Fundamental Research Laboratory, and Kobe Fundamental Research Laboratory

Akita Sumitomo Bakelite Co., Ltd., Artlite Kogyo Co., Ltd., S.B. Techno Plastics Co., Ltd., Hokkai Taiyo Plastic Co., Ltd., Yamaroku Kasei Industry Co., Ltd., Kyushu Bakelite Industry Co., Ltd., Suzuka Plant of Decolanitto Co., Ltd., Kyudo Co., Ltd., and Y-Techs Co., Ltd.

### Compilation Methods

- Figures have been tabulated based on the Company's Environmental Accounting Compilation Standards with reference to the Ministry of the Environment's Environmental Accounting Guidelines (2005 version).
- In cases where composite costs include costs other than those related to environmental conservation, environmental conservation costs have been tabulated based on the proportion used for environmental conservation purposes.
- Economic benefits have been calculated by adding up benefits that can be measured based on certain premises, and such theoretical benefits as risk aversion are not included.
- Expenses do not include depreciation.
- Research and development investments and expenses are compiled for each environment-related category.

# Benefits of Environmental Conservation for Fiscal 2007

Reduction of environmental (compared with previous fiscal )	•	Environmental impact (fiscal 2007) (tons)		
Reduction in amount of air emissions and other substances	83 t	Amount of air emissions and other substances	317 t	
Reduction in amount of CO <sub>2</sub> emissions	12,226 t	Amount of CO <sub>2</sub> emissions	122,559 t	
Reduction in amount of waste Reduction in amount of landfill and incinerated waste without energy recovery	1,300 t 60 t	Amount of waste generation Amount of landfill and incinerated waste without energy recovery	10,017 t 227 t	

### **Economic Benefits for Fiscal 2007**

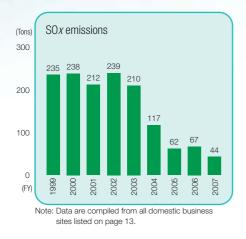
Item	Amount (millions of yen)
Cost reductions resulting from energy conservation	73
Cost reductions resulting from waste reduction	19
Income from external recycling	205
Cost reductions resulting from internal recycling	728
Others	4
Total	1,029

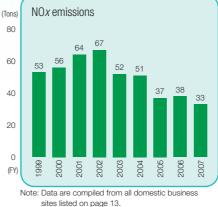
18

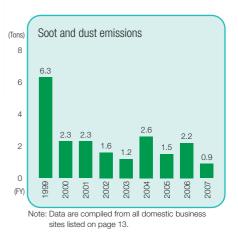
# Reduction of environmental impact substances in the air and water

### **Air Emissions**

Following a fuel switch to natural gas from heavy oil at the Shizuoka Plant in 2004, we have been implementing similar fuel switches at each of the other business sites in Japan. These efforts have resulted in a definite reduction of air pollutant emissions.







# Water Discharges

Factory water discharges are broadly classified into wastewater, which includes industrial wastewater and domestic wastewater, and rainwater, which includes coolant water. By recycling coolant water, we are working to curb the use of water resources and reduce our wastewater discharges.

Regarding wastewater, we operate such treatment equipment as high-precision phenol recovery equipment, active sludge treatment equipment, and neutralizing and coagulating sedimentation equipment (metal removal treatment) and have established a regular surveillance system that uses surveillance devices in an effort to comply with national wastewater standards, ordinances, and agreements with local communities.



\* In fiscal 2004 and fiscal 2005, poor sludge precipitation at active sludge treatment facilities caused a rise in COD. Subsequently, however, COD levels have been steadily reduced owing to the reevaluation of facility operating conditions.

Note: Data are compiled from all domestic business sites listed on page 13.

COD: Chemical oxygen demand

An index of organic matter pollution in water that indicates the amount of oxygen consumed by the oxidizing agent potassium permanganate in the oxidation of organic matter in water.



Rainwater treatment equipment (Nara Plant)



# **Reduction of Emissions of Solvents and Others**

Since 1996, the Company has been involved in JCIA PRTR initiatives, keeping track of the release and transfer of certain substances and setting medium-term and long-term targets for improvement, focusing particularly on reducing its air emissions of solvents. The graph on the right shows the release of solvents and other chemical substances into the air since fiscal 1999. Since fiscal 2002, we have been moving forward with measures to reduce emissions, including the planned installation of exhaust gas treatment facilities and the implementation of steps to reduce the amounts of solvents used. As a result, in fiscal 2007, we reduced emissions by approximately 90% from the fiscal 1999 level. Furthermore, the Company

(PRTR System\*) into the air, approximately 99% less than in fiscal 1999.

released 16 tons of chemical substances controlled by the PRTR Law

The amounts of the 28 PRTR Law controlled substances released and transferred by the Company are shown in the chart below.

\* Pollutant Release and Transfer Register (PRTR) System: System whereby businesses that handle various harmful chemical substances designated by the Law Concerning Reporting, Etc., of Releases into the Environment of Specific Chemical Substances and Promoting Improvements in Their Management collect data regarding the release of such substances into the environment and make voluntary improvements to their management of such chemicals, thereby preventing damage to the environment caused by chemical substances.

2004 Note: Data are compiled from all domestic business sites listed on page 13

.018 113

653

-1.904

1,398

2002

2001

2003

#### Transfer and Release of Substances Subject to the PRTR Law (Fiscal 2007 Performance)

Government		A		Amount released		Amount tr	ansferred
order number	Substance	Amount used (manufactured)	Into air	Into water	Into soil	As waste matter	As sewage
1	Zinc compounds (water-soluble)	33	0	0	0	1.9	0
15	Aniline	171	0	0	0	0.2	0
25	Antimony and its compounds	120	0	0	0	5.5	0
29	Bisphenol A	381	0	0	0	0	0
30	Bisphenol A-type epoxy resin (liquid)	520	0	0	0	0.5	0
42	Ethylene oxide**	-0.9	0	0	0	0	0
43	Ethylene glycol	927	0	0	0	2.3	0
44	Ethylene glycol monoethyl ether	32	0	0	0	0	0
45	Ethylene glycol monomethyl ether	72	2.4	0	0	18	0
63	Xylene	32	1.5	0	0	0.7	0
64	Silver and its water-soluble compounds	18	0	0	0	0	0
67	Cresol	1,389	0	0	0	0.2	0
104	Salicylaldehyde	6.5	0	0	0	0	0
172	N,N-dimethyl formamide	734	3.8	0	0	18	0
176	Organic tin compounds	61	0	0	0	3.1	0
177	Styrene	8.9	0.1	0	0	0	0
198	Hexamethylenetetramine	1,135	0	0	0	30	0
202	Tetrahydromethylphthalic anhydride	161	0	0	0	0	0
207	Copper salts (water soluble, except complex salts)	(75)	0	0.5	0	0	0
227	Toluene	362	4.6	0	0	21	0
232	Nickel compounds**	1.8	0	0	0	0.1	0
242	Nonylphenol	1.8	0	0	0	0	0
243	Barium and its water-soluble compounds	99	0	0	0	0	0
266	Phenol	28,671	2.4	0	0	19	0
272	Bis (2-ethylhexyl) phthalate	18	0	0	0	0.4	0
300	1,2,4-benzenetricarboxylic 1,2-anhydride	20	0	0	0	1.3	0
304	Boron and its compounds	15	0	0	0	1.1	0
310	Formaldehyde	13,423 (16,975)	1.6 0.1	0	0	23	0

(Tons) 4,000

3.000

2,000

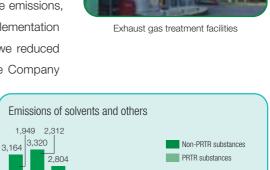
1,000

0

(FY)

999 2000

\*\* Specific Class 1 designated chemical substances (others are Class 1 designated chemical substances)



78 39 16 14 11 10

> 400 317 206 158 150

460

192

140 147

201

(Tons)



20

Sumitomo Bakelite implements energy conservation activities and strives to reduce CO<sub>2</sub> emissions.

### Plant- and Office-Related Energy-Conservation Measures

Global warming resulting from greenhouse gases, such as  $CO_2$ , is said to be a cause of climate change exemplified by abnormal weather patterns and rising temperatures and is now seen as the problem that threatens the foundations of human survival. The Sumitomo Bakelite Group has been working to reduce  $CO_2$  emissions through a variety of energy conservation initiatives.

The commencement of full-fledged operations of a cogeneration system installed at the Shizuoka Plant in August 2004 contributed to Groupwide reductions in energy use and CO<sub>2</sub> emissions.

This cogeneration system can reduce  $CO_2$  emissions by enhancing energy conversion efficiency by generating electricity via gas turbine power generation using natural gas for combustion while employing the exhaust heat from this process to create steam. In addition, we were able to reduce the amount of electricity used by installing a steam turbine compressor in July 2006 that uses energy released when the high-pressure vapor generated in the cogeneration system is reduced to a normal pressure level and ceasing operation of existing compressors.



Cogeneration system (Shizuoka Plant)



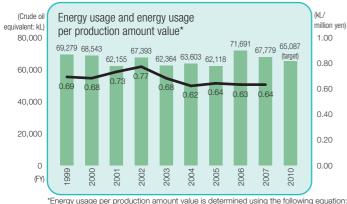
Steam turbine compressor (Shizuoka Plant)



Boiler converted to utility gas (Amagasaki Plant)

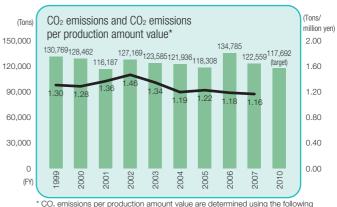
Since 2007, the Amagasaki, Shizuoka, and Utsunomiya plants have been able to reduce emissions of CO<sub>2</sub>, and control emissions of SO<sub>x</sub> and soot and dust, by switching from heavy oil to utility gas for boiler fuel. The building in which Sumitomo Bakelite's Head Office is located was in fiscal 2006 selected by Japan's Ministry of the Environment to receive subsidies under a program wherein grants are provided to facilities establishing voluntary greenhouse gas reduction targets. The implementation of variable flow control in accordance with air-conditioning load and other efforts at the building has reduced its CO<sub>2</sub> emissions.

Further, to facilitate continuous energy-saving measures from a different point of view, some facilities are undergoing energy diagnostics studies by an external company.



Energy usage per production amount value is determined using the following equation Energy usage per production amount value = energy usage / (production amount x unit price)

- Notes: 1. Data are compiled from all domestic business sites listed on page 13.
  - Starting from fiscal 2006, calculations of production amount value include Sunbake Co., Ltd., Decolanitto Co., Ltd., Shizuoka Plant, and 4 former Tsutsunaka sites.
  - Energy usage (crude oil equivalent) is calculated based on the Law Concerning the Rational Use of Energy.



CO<sub>2</sub> emissions per production amount value are determined using the following equation: CO<sub>2</sub> emissions per production amount value = CO<sub>2</sub> emissions / (production amount x unit price)

- Notes: 1. Data are compiled from all domestic business sites listed on page 13.
   Starting from fiscal 2006, calculations of production amount value include Sunbake Co., Ltd., Decolanitto Co., Ltd., Shizuoka Plant, and 4 former Tsutsunaka sites.
  - Energy usage (crude oil equivalent) is calculated based on the Law Concerning the Rational Use of Energy.

In addition to measures noted on the previous page, we are proceeding with various sorts of energy-conservation initiatives at each of our business sites. These initiatives include the following:

- 1. Installation of inverter controllers for pumps, fans, compressors, and others
- 2. Water cooling of outdoor air-conditioning units
- 3. Installation of an energy-saving static capacitor
- 4. Installation of energy-saving water-cooling chillers
- 5. Installation of energy-saving lighting fixtures
- 6. Installation of energy-saving controllers
- 7. Maintenance of air-conditioning equipment

- 8. Refurbishment and maintenance of cooling towers
- 9. Recovery of steam from steam drains
- 10. Spot repairs of steam and air leaks
- 11. Removal of unnecessary pipes
- 12. Installation of energy-saving molding machines
- 13. Application of insulation coating to roofs and tanks
- 14. Reduction of air-conditioned space through rearrangement and cleaning up the workplace



Installation of photovoltaic facility (Nara Plant)



Light shield installation (Tsu Plant)



Energy conservation via greenification (Nara Plant)

# **Distribution-Related Energy-Conservation Measures**

Based on the revision of the Law Concerning the Rational Use of Energy, Sumitomo Bakelite has begun working as a "specified load owner" to calculate shipping-related energy usage since fiscal 2006.

In fiscal 2007, annual shipping volume increased almost 11.00 million ton-kilometers—from 30.30 million ton-kilometers to 41.27 million ton-kilometers—reflecting the addition of two facilities (Kanuma and Nara plants) to the scope of measurement. However, energy-conservation measures decreased energy consumption per shipping unit (energy consumption/shipping ton-kilometers) by 3.0%.

#### **Annual Energy Use Report Figures**

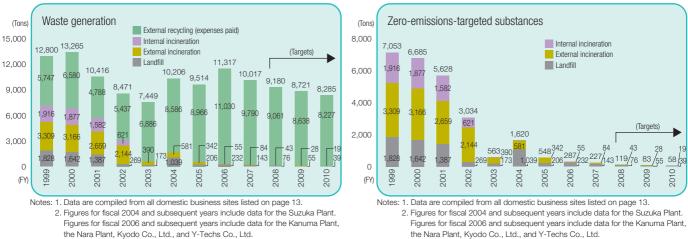
		Units	FY2006	FY2007
Shipping ton-kilometers		Thousands of ton-kilometers	30,297	41,265
CO2 emissions a	CO <sub>2</sub> emissions associated with energy use		5,090	6,730
Energy con-	Energy consumption (crude oil conversion basis; kL)/ shipping thousands of ton-kilometers	kL/thousands of ton-kilometers	0.0632	0.0613
sumption per shipping unit	Rate of change (FY2006=100%)	%	100%	97%

# The Sumitomo Bakelite Group aims to reduce waste generation and achieve zero emissions.

In its waste reduction efforts, the Sumitomo Bakelite Group focuses on improving yield in manufacturing processes and controlling waste generation by recycling within those processes. Furthermore, with regard to waste generation, we are aiming to achieve "zero emissions," recycling all waste and thereby avoiding the use of landfills or incineration without energy recovery.

The graphs below entitled "Waste generation" and "Zero-emissions-targeted substances" show our progress and targets. Since fiscal 2000, we have steadily reduced waste generation by improving yield, implementing recycling, and converting waste into valuable resources. Year-on-year increases in total waste generation were recorded in fiscal 2004 and fiscal 2006 owing to the addition of new facilities to the scope of data gathering and other factors. In fiscal 2007, however, progress in solvent-recovery measures at the Utsunomiya Plant and Kyushu Bakelite Industry Co., Ltd., exceeded original plans. This and other factors enabled a 1,300-ton year-on-year reduction of total waste generation in fiscal 2007.

Despite the addition of new facilities to the scope of data gathering, total generation of zero-emissions-targeted substances fell to 97% below the fiscal 1999 (reference year) level, reflecting particularly significant reductions at the Suzuka Plant of Decolanitto Co., Ltd., S.B. Techno Plastics Co., Ltd., and other sites.



3. Waste consists of the amount of landfill waste, externally incinerated waste internally incinerated waste, and externally recycled waste (expenses paid)

the Nara Plant, Kyodo Co., Ltd., and Y-Techs Co., Ltd. 3. Zero-emissions-targeted substances include landfill waste, externally incinerated

waste, and internally incinerated waste

# The number of zero-emissions-certified sites has increased to 11 in Japan and 1 overseas.

### Zero-Emissions-Certified Sites\*

Fiscal years	Domestic	Overseas
2002	Yamaroku Kasei Industry Co., Ltd.	
2003	Amagasaki Plant and Kyushu Bakelite Industry Co., Ltd.	
2004	Utsunomiya Plant, Tsu Plant, and Fundamental Research Laboratory	Sumitomo Bakelite
2005	Shizuoka Plant	(Taiwan) Co., Ltd.
2006	Artlite Kogyo Co., Ltd.	
2007	Akita Sumitomo Bakelite Co., Ltd., S.B. Techno Plastics Co., Ltd., Hokkai Taiyo Plastic Co., Ltd.	

\* Sites are internally designated zero-emissions-certified sites when their monthly volume of landfill waste and incinerated waste without energy recovery has remained below 0.5 ton for 12 consecutive months

#### **Reports from Zero Emissions Promotion Managers**

#### Akita Sumitomo Bakelite Co., Ltd.

Our efforts to attain our zero emissions target began with measures to evaluate the current situation—determining the type and volume of waste generated by each process of each manufacturing department. Particularly challenging were the complicated processes of flexible printed circuit board manufacturing units, and evaluating those processes required detailed interviews of frontline manufacturing staff. Next, we recorded organizational unit names on each waste product bag and also determined the location of each bag placement in line with wastesorting charts. In the case of units that were not sorting their waste properly, we dispatched people to those units to undertake on-site waste-sorting training and request the cooperation of the unit's staff. By ensuring thorough waste sorting, we clarified the materials that should be recycled, and this accelerated our efforts to find recycling routes. In the course of these processes, we were able to convert a portion of waste into recycling materials with value.



Manabu Funaki Manager, Environmental Protection and Facility Management Department

Going forward, we will sustain our efforts to achieve further reductions in the volumes of zero-emissions-targeted substances as well as other waste materials.

### S.B. Techno Plastics Co., Ltd.

Attaining our zero emissions target required us to begin recycling materials that had previously been placed in landfills. The process of arranging for recycling entailed efforts to minimize the price charged by outside recyclers as well as minimizing the time required to complete wastesorting work. This is because the cost of recycling is generally higher than the cost of landfills.

Our method of handling these tasks was to undertake negotiations with a greater number of waste processing companies. While doing this, we encountered a new company that was gathering waste plastic for manufacturing refuse paper and plastic fuel (RPF) designed to be used by a paper manufacturing company. Our cooperation with that company enabled us to attain our zero emissions target while paying low processing charges and not having to spend very much time sorting materials. We were very pleased to be able to kill three birds with one stone. Moreover, our ordinary waste processing expense has been greatly reduced since we made this arrangement for our waste plastic.

In the future, we want to achieve "zero emissions" in the original sense of the phrase, and we intend to work in an uncompromising manner to realize this ambition.

#### PCB Management

Currently, 10 Sumitomo Bakelite business sites are using or storing electric equipment (capacitors and transformers) that contains PCBs. Going forward, we will make use of the Japan Environmental Safety Corporation (JESCO)'s disposal facilities to systematically dispose of this equipment. Furthermore, we ceased using lighting fixtures that use PCB stabilizers at the end of 2004 and plan to systematically dispose of these lighting fixtures in the same way.



Satoru Yamamoto General Manager, Technical Department

# Sumitomo Bakelite promotes recycling for the efficient use of resources.

Regarding recycling initiatives, Sumitomo Bakelite has been reusing phenols recovered from phenolic resin reaction effluent, pulverizing phenolic resin laminates and melamine resin decorative laminates for use as a filler in phenolic resin molding compounds, and reusing sprue and runner—by-products of molded products—as raw materials.

Other examples of recycling initiatives include:

- Reuse of epoxy resin and phenolic resin molding compound waste as a raw material and fuel for cement
- Reuse of waste isopropyl alcohol and acetone via distillation at the Company
- Paper recycling via the repulping of raw-material bags and paper waste
- Recovery and reuse of plastic cutting boards
- Reuse of film and sheet materials as recycled products (trays, mats, planters, etc.)
- Reuse of wastewater treatment equipment sludge as a raw material for cement

Established in 1992 to promote waste recycling, S.B. Recycle Co., Ltd., is developing more efficient recycling technologies, conducting research on the reuse of by-products, establishing waste recovery and treatment systems for plastic waste generated by customers, and working to enable the use of microorganisms for phenol biodegradation and other objectives.



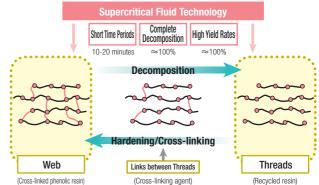
so that they can be rewoven into webs (see illustration).

Historically, the recycling of phenolic resin products has been limited to thermal recycling applications, including reuse as raw fuel. However, we have established a project team that has been working to develop and put into practical use chemical recycling processes that enable reuse as high-value-added chemical raw materials. Thanks to their efforts, the team has succeeded in developing the world's first chemical recycling method for phenolic resin products that employs supercritical fluid technology. This technology is able to completely decompose three-dimensionally cross-linked phenolic resins in periods of only about 10 to 20 minutes and makes it possible to achieve high recoverable yield rates for recycled resin

for use as a raw material chemical. The principle of this chemical recycling method is to cut the links between threads in web structures and liberate the threads Distillation recovery equipment for waste isopropyl alcohol

Demonstration plant for chemical recycling

In July 2005, this method received recognition for its superiority and innovativeness with its selection as a subsidized project by the New Energy and Industrial Technology Development Organization (NEDO). As one part of this subsidized project, in March 2007, we finished building a demonstration plant at the Shizuoka Plant that is able to annually process several hundred tons of phenolic resins (see photo). At present, we are pressing ahead with the development of mass production at the demonstration plant with the aim of the early practical use and commercialization of the recycling method.



Distillation resources or winners



Sumitomo Bakelite takes environmental, safety, and health issues

into consideration throughout all stages of the product life cycle-

from development through disposal.



#### Prior Assessment of New Raw Materials

Sumitomo Bakelite evaluates raw materials to be newly used in product development from the standpoint of regulations in Japan and overseas, hazardous property data, and other important factors and has in place a framework for screening and registering such materials. For use as part of assessment criteria, we have established lists of banned substances and substances for which use is restricted.

#### Green Procurement and Supplying Safe Products

Consideration with regard to the chemicals contained in products throughout all stages of their life cycles, including use and disposal, has become a necessity. The EU's Restriction of Hazardous Substances (RoHS) directive and other regulations concerning the use of specified chemical substances are requiring the augmentation of product environmental quality management processes involving suppliers as well as increased information transmission. Response to environmental issues, primarily in the electronics and automotive industries, is on the rise not only in the EU member countries but also in other countries throughout the world. As a "Green Partner" to customers, the Sumitomo Bakelite Group is working with its customers to manage regulated chemical substances and plan the development and provision of products that do not harm the natural environment, even after their disposal. Regarding the new EU Regulation for Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) that came into force on June 1, 2007, we are moving forward with measures to respond in cooperation with other companies in the EU.

#### Supplying Chemical Substance Data

The Material Safety Data Sheet (MSDS) is a data sheet that provides information to users of chemical substances and products to ensure safe use and handling. We require that MSDSs be provided for all raw materials procured by the Group and always available at the site where raw materials are handled and conduct MSDS-based safety training for employees. We are also issuing MSDSs for our products as a means of providing customers with safety information. Furthermore, ahead of the impending adoption of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) by countries around the world from 2008, we are revising the labeling and MSDSs for all products.



#### Comprehensive Chemical Substance Management System

To effectively manage responses to chemical substance related laws and regulations as well as other information associated with chemical substances, the Sumitomo Bakelite Group is moving ahead with the introduction of its Comprehensive Chemical Substance Management System. Because the system records the raw materials and a breakdown of the chemical substances in those materials, it facilitates the simple confirmation of data related to products' environment friendliness, safety, and compliance with laws and regulations. It also facilitates responses to domestic and overseas laws and regulations by automatically performing products' GHS classifications and creating GHS labels and MSDSs that meet all legal and regulatory requirements.

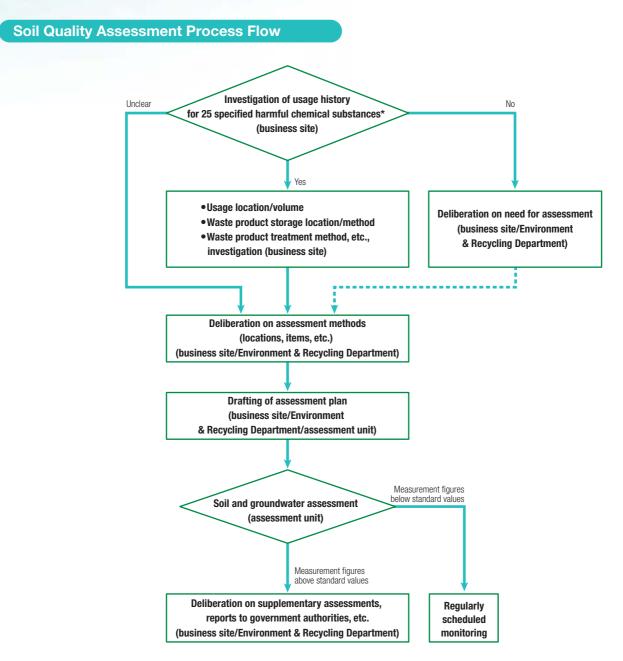
Going forward, plans call for further increasing the sophistication of the Comprehensive Chemical Substance Management System to respond to such needs as those associated with REACH and other global regulatory systems as well as green procurement programs.

A sample GHS label

26

# Moving Ahead with Assessments and Countermeasures Regarding Group Business Sites in Japan

Regarding the Group's business sites in Japan, we are conducting investigations regarding the usage history of 25 harmful chemical substances specified by the Soil Contamination Countermeasures Law, and, based on the results, we are moving ahead with soilquality assessments in line with the process flow shown below.



<sup>\*</sup>Substances specified by the Soil Contamination Countermeasures Law

Regarding cases in which there is a usage history for harmful substances, we consider information related to such factors as usage methods, usage locations, and disposal methods before implementing soil and groundwater assessments. If the assessment results include measurement figures above standard values specified by the Soil Contamination Countermeasures Law and other relevant laws and regulations, then we move ahead with the implementation of countermeasures at affected locations.

# Contamination of soil and groundwater at a vacant lot of Sano Plastic Co., Ltd.

We conducted a general assessment of the soil and groundwater on the entire premises of a site owned by Sumitomo Bakelite subsidiary Sano Plastic Co., Ltd.,<sup>-1</sup> following the dismantling of a factory building there (assessment implemented from December 2006). The assessment detected trichloroethylene and other substances in excess of the environmental quality standard, in both the site's soil and groundwater. Moreover, inspections of the groundwater in areas surrounding the site also detected trichloroethylene in excess of the allowable limit in some well water<sup>-2</sup>. It is believed that, when the plant was in operation, there was the inappropriate handling of trichloroethylene used in the cleaning of resin blending tanks.

To make the results of the survey known, we gave a report immediately to the local government authorities and explained the results to the neighborhood community association. In particular,



Overall view of purification facility construction site



Local citizens visiting Company facilities

steps were taken to promote awareness of the need for caution regarding the use of well water. Thus far, there have been no confirmed cases of negative impact on the health of local residents.

Subsequently, to comprehensively assess the contamination situation on horizontal and vertical axes throughout the site, a detailed assessment was implemented<sup>3</sup>. After considering countermeasure methods based on the results of the detailed assessment, it was ultimately decided to remediate the site using a combination countermeasure method involving the excavation and removal of some soil as well as the use of reductive decomposition to decontaminate soil. Implementation of the countermeasures was begun in February 2008 and is expected to be completed in May 2009. We have worked hard to increase our communications with local residents through such measures as the organization of an explanation meeting before the start of countermeasure implementation and the arrangement of inspection visits so that local residents can observe the process of countermeasure implementation.

\*1. Address: 213 Kubocho, Sano City, Tochigi Prefecture. As a member of the Sumitomo Bakelite Group, Sano Plastic manufactured plastic-molded parts at this site from August 1968 through June 2002. The factory on the site was closed in August 2002 and is in liquidation.

\*2. As of July 24, 2008, the largest values detected in well water were 0.75 mg/L for trichloroethylene (versus an environmental quality standard of 0.03 mg/L) and 0.62 mg/L for cis-1,2-dichloroethylene (versus an environmental quality standard of 0.04 mg/L).

\*3. The largest values detected in soil were 1.3 mg/L for trichloroethylene (versus an environmental quality standard of 0.03 mg/L) and 11.0 mg/L for cis-1,2-dichloroethylene (versus an environmental quality standard of 0.04 mg/L). The largest values detected in groundwater were 300 mg/L for trichloroethylene and 190 mg/L for cis-1,2-dichloroethylene. Also detected in groundwater in concentrations exceeding environmental quality standards were 1,1-dichloroethylene and tetrachloroethylene.

#### Soil Contamination at Nara Plant

Lead in concentrations exceeding environmental quality standards was detected in sludge in roadside rain gutters within the plant complex (January 2008)<sup>-4</sup>. Because rainwater from such gutters flows into a regulating pond shared with other companies in the industrial park in which the Nara Plant is located, the plant notified the industrial park's management committee, and an assessment of the regulating pond was undertaken. This assessment discovered high lead concentrations at certain locations on the pond's bottom<sup>-5</sup>. A report on this discovery was made to the park and government authorities, and deliberations regarding remedial measures are now proceeding.

\*4. The largest values detected were 638 mg/kg (while there is no statutory environmental quality standard for lead concentrations in sediment, the environmental quality standard for lead concentrations in soil is 150 mg/kg).

\*5. The largest values detected were 260 mg/kg (same as above).

#### Soil Contamination at Kanuma Plant

Boron in concentrations exceeding environmental quality standards was detected in soil adjacent to a waste liquid tank within the plant complex (March 2008). Although a subsequent detailed study<sup>6</sup> did not detect boron in groundwater, our plans call for continuous monitoring of a groundwater observation well, along with concurrent deliberations regarding soil decontamination methods.

\*6. The largest boron value detected via elution tests was 3.8 mg/L (versus an environmental quality standard of 1 mg/L) (sampled on July 18, 2008).



The Sumitomo Bakelite Group is constantly striving to further improve its environmental conservation activities.

### **History of Activities**

Year	Sumitomo Bakelite Group initiatives	Societal developments
1969	Pollution countermeasures secretariat established	
1973	<ul> <li>Environmental Management Division established</li> <li>Environmental auditing of domestic business sites commenced</li> </ul>	
1974	• Environmental management departments established for all business sites	
1978	<ul> <li>Environmental auditing of domestic affiliates commenced</li> </ul>	
1987		Montreal Protocol on Substances That Deplete the Ozone Layer adopted
1990	Environmental Issue Action Committee established	
1991	<ul> <li>Recycling Technology Action Office established</li> </ul>	Law Concerning the Rational Use of Energy enacted
1992	• S.B. Recycle Co., Ltd., established	<ul> <li>United Nations Conference on Environment and Development (UNCED or Earth Summit) generates several agreements, including the "Rio Declaration on Environment and Development" and "Agenda 21"</li> </ul>
1993	<ul> <li>Environment and Safety Volunteer Plan drafted</li> <li>Environment and safety management regulations established</li> <li>Environmental audits of overseas affiliates commenced</li> </ul>	The Basic Environment Law enacted
1994	<ul> <li>Use of certain CFCs and 1,1,1-trichloroethane ceased</li> </ul>	
1995	<ul> <li>Responsible Care Committee established</li> <li>The Company joined the Japan Responsible Care Council as a founding member.</li> </ul>	<ul> <li>Japan Responsible Care Council (JRCC) established</li> <li>Law for Promotion of Sorted Collection and Recycling of Containers and Packaging enacted</li> </ul>
1997	<ul> <li>"Corporate Policies for Safety, Health, and the Environment" revised</li> <li>Utsunomiya Plant and Sumitomo Bakelite Singapore Pte. Ltd. acquired ISO 14001 certification</li> </ul>	Kyoto Protocol adopted by the Third Conference of the Parties of the United Nations Framework Convention on Climate Change (COP3)
1998	First Environmental Activities Report issued	
1999	All Sumitomo Bakelite plants acquired ISO 14001 certification	<ul> <li>Law Concerning Reporting, Etc., of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management enacted</li> <li>Law Concerning Special Measures against Dioxins enacted</li> </ul>
2000	Environmental accounting implemented	Basic Law for Establishing the Recycling-Based Society enacted
2001	• Environmental Report issued (independent reviews conducted)	Law Concerning Special Measures against PCB Waste enacted
2002	<ul> <li>Scope of <i>Environmental Report</i> expanded to include domestic affiliates</li> <li>Tokyo Kakohin Co., Ltd., received an award for promoting a "3R" policy of reduce, reuse, and recycle</li> <li>Risk Management Committee established</li> </ul>	<ul> <li>Soil Contamination Countermeasures Law enacted</li> <li>Japan adopted COP3 Kyoto Protocol</li> <li>World Summit on Sustainable Development generates Johannesburg Declaration on Sustainable Development</li> </ul>
2003	<ul> <li>Yamaroku Kasei Industry Co., Ltd., became certified as the Company's first zero waste emissions plant</li> <li>Compliance Committee established</li> </ul>	Building Code revised to resolve "sick building" syndrome
2004	Shizuoka Plant commenced operations of a cogeneration system	Air Pollution Prevention Law revised to reduce volatile organic com- pound (VOC) emissions
2005	Title of annual Environmental Report changed to Environmental & Social Report to reflect broader coverage of social initiatives	<ul><li>Kyoto Protocol went into effect</li><li>Ordinance on Prevention of Health Impairment Due to Asbestos</li></ul>
2007		The new EU Regulation for Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) came into force
2008	<ul> <li>30 Sumitomo Bakelite Group domestic and overseas business sites held ISO 14001 certification as of July 31</li> </ul>	

Items in blue represent developments in international society.

# **Regarding Future Activities**

Sumitomo Bakelite began emphasizing measures to solve environmental problems from an early date. In 1995, the Company became a founding member of the Responsible Care Council, adopted the management principle, "Management that is highly compatible with society and the environment," and began concerted Companywide environmental protection programs. To further strengthen our Companywide environmental management systems, we have begun using Material Flow Cost Accounting (MFCA) methods to maximize our resource productivity, and we are also moving forward with the introduction of comprehensive chemical substance management systems to ensure our capabilities for conformance with the EU's REACH and other international chemical substance management requirements.



Koichi Nakamura, General Manager, Environment & Recycling Department



Excerpt from Our Standards of Conduct

Sumitomo Bakelite respects the personality and human rights of each person and aims to create workplaces conducive to work.

We strive to recruit a workforce with diverse values and personalities, facilitate each employee's self-expression, and provide workplaces that are enriched both physically and esthetically.

Accordingly, we respect international human rights standards and do not discriminate on the basis of nationality, race, skin color, religion, ideology, age, gender, marital status, health condition, physical handicaps, or mental handicaps.

#### Specific Standards of Conduct

- 1. The Company will provide employees with information relating to business conditions after giving due consideration to its corporate structure.
- 2. We will actively participate in suggestion plans and small group activities, striving to create a comfortable work environment through workplace improvement activities.
- 3. We will promote amity in the workplace and foster trusting relationships among colleagues.
- 4. We will maintain and improve on the positive labor-management relationship, working together to achieve a comfortable workplace.
- 5. Both internally and externally, we will not discriminate with regard to factors such as race, nationality, ethnicity, sex, age, religion, philosophy or creed, education, or health condition.
- 6. We will abide by the Manual for the Prevention of Sexual Harassment and will not condone sexual harassment.

### Group Employee Standards of Conduct

The Sumitomo Bakelite Group is expanding its operations globally and currently has 30 bases in 15 countries around the world. The number of the Group's employees is approximately 9,000, of which approximately 3,500 are working in Japan. Thus, the number of our overseas employees—approximately 5,500—exceeds the number of domestic employees by roughly 1.5 times. Group companies in Japan and overseas have drafted their own employee conduct standards based on the parent company's Our Standards of Conduct, and they are working to promote thorough conformance with these standards together with rigorous compliance management.

Aiming to be an outstanding international company, Sumitomo Bakelite anticipates that the overseas share of its manufacturing and marketing operations will continue trending upward in the future. Without discriminating between our employees in Japan and elsewhere, we are doing our utmost to provide all Group employees with pleasant workplaces that are cheerful and conducive to efficient work and that promote growth in mutual trust among employees of diverse races, nationalities, ethnicities, genders, and religions.

#### **Employment of Seniors**

In response to the April 2006 implementation of the Revised Law Concerning Stabilization of Employment of Older Persons, we revised our regulations regarding the reemployment of employees following their retirement at the mandatory retirement age. The revisions are designed to facilitate post-retirement hiring and promote greater use of the knowledge, know-how, and technologies that employees have accumulated over many years.

### Support for Employees with Children

Sumitomo Bakelite is emphasizing measures to create work environments that enable employees to harmonize their work with such life

# Retirement-Age Retirees and Subsequent Rehires over the Past Two Years

	FY2006	FY2007
Number of retirement-age retirees	60	67
Number of post-retirement rehires	27	40
Rehiring ratio	45.0%	59.7%

# Child-Raising Leaves and Subsequent Returns to Work over the Past Two Years

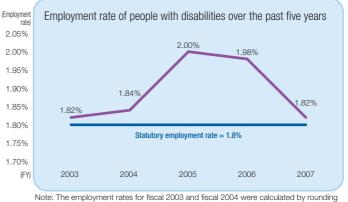
	FY2006	FY2007
Number of child-raising leaves	5	10
Number of subsequent returns to work	5	10
Number of returnees with shortened daily working hours	2	5
Return-to-work ratio	100%	100%

events as childbirth and child raising. In 2007, the Company introduced various systems in line with that goal, including systems that enable employees raising children to shorten their daily working hours until their children have completed the third year of elementary school, that expand the application of annual holiday leave for childbirth and child-raising purposes, and that create special vacation periods for child-raising and hospitalization purposes. These initiatives have increased the number of employees obtaining child-raising leaves of absence, and they are also increasing the number of employees who return to the Company after such leaves of absence.

#### Employment of People with Disabilities

Sumitomo Bakelite considers the employment of people with disabilities as established by law to be an important corporate mission and is working to provide such individuals who desire employment with highly safe jobs that are entirely appropriate for their individual capabilities.

The July 2007 integration of Tsutsunaka Plastic Industry Co., Ltd., caused a slight decline in Sumitomo Bakelite's disabled individual employment rate, but we plan to further increase our efforts to hire people with disabilities.



Note: The employment rates not inscar 2004 and iscar 2004 were calculated by founding to the nearest hundredth, but the rate was subsequently calculated by discarding figures smaller than one-hundredth.

### Health Management

Sumitomo Bakelite strives to create workplaces that help employees work while maintaining good physical and mental health. Our programs in this regard center on regularly scheduled health checks and health guidance based on the results of those checks, and our efforts to prevent lifestyle problems have also generated tangible benefits.

As the importance of mental health promotion measures has steadily increased in recent years, Sumitomo Bakelite has introduced systems that enable employees to conveniently consult with doctors and counselors via telephone calls and emails. We also strive to promote the early discovery and treatment of problems by employing industrial physicians and consulting physicians. In fiscal 2007, we distributed a pamphlet entitled *Heartful Self-Care from Today* to all employees to promote greater awareness of the need for self-care, and managers participate in a training course on department-based health care led by an occupational health specialist.

#### Human Resource Development

The people we seek to hire and develop are ones who understand our basic management policy—"We value trust and maintain steadiness and, based on this, we strive through our business activities to make contributions to social progress and improvements to quality of life worldwide"—and our corporate mission of aiming to be a "Global Excellent Company." These are people who are able to autonomously help the Company achieve sustained business growth.

Specifically, the following are key characteristics of the autonomously motivated personnel we seek.

- 1. People with the drive to grow and acquire new skills and knowledge necessary for their jobs;
- 2. People with a pro-reform stance who are not satisfied with the status quo, but are always looking for ways to do a better job;
- 3. People with a team-oriented approach who can combine their individual strengths with the strengths of those around them to deliver better results;
- 4. People with outstanding skills and know-how who can produce results in jobs both in and outside of Japan as professionals.

In September 2007, we opened the Sumitomo Bakelite School (SB School), which is designed to provide lifelong education and training courses that help the Sumitomo Bakelite Group realize sustained growth in business operations as well as rise in corporate value. It provides courses for all grades of employees from all departments involved with business activities. These courses include "all-employee education" courses that confirm and reinforce employees' awareness of basic management principles as well as fundamental knowledge about such issues as compliance, human rights, occupational safety, quality, and environmental protection. The school is also planning and methodically implementing various other kinds of education for a total of 24,000 students. In the current fiscal year, also, the school is implementing diverse educational programs designed to increase knowledgeability and upgrade skills.

As a means of providing on-the-job training in daily operations, we have implemented a system of work targets. Employees meet with their superiors to establish targets and complete a full management cycle of "plan, do, check, action" (PDCA) every six months.

Superiors hold periodic meetings with employees to set targets, check interim progress, and assess outcomes, using discussion and guidance to steadily raise the business execution capabilities of each employee, with the ultimate aim of further boosting their department's performance.

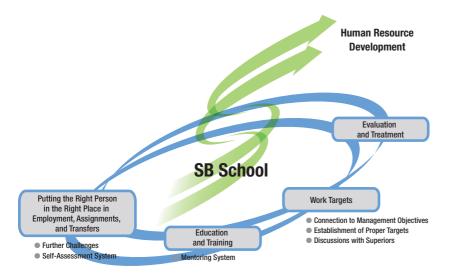
3-

To assess the suitability of employees for their current positions as well as place employees in fields that take full advantage of their abilities, we have adopted a self-assessment system. By advancing careers through job rotation, we are working to nurture employees who will be recognized as professionals both within and outside of the Company.

As business becomes increasingly global and borderless in the 21st century, Sumitomo Bakelite is actively striving to develop the capabilities of each employee—the Company's most precious management resource—through sustained development as a "Global Excellent Company."

#### SB School and Personnel Development

#### Scenes from SB School Classes





Manufacturing technology course



Follow-up training for newly hired employees

#### Structure of SB School Education and Training

	Companywide Employee Training									Corporate Department Training		Training for Specific Purposes	Training for Each Rank		Supporting Self- Development		
Executive Officers													Training for executive officers				
General Managers													Training for general managers				
Section Managers	Basic	Compliance		Quality and environment	CS (customer satisfaction) improvement		Human rights in the workplace			Basic and specialist training: CS marketing Legal and labor relations, accounting, credit, IT, intellectual property, environment, quality, production technology, Sumitomo Bakelite Production System (SBPS), and technology		Basic training and practice in writing emails in English     Logical thinking     Presentation     Cash flow     Numbers-based management	Training for newly appointed section managers*	Self-study English educatio	(0)		
Assistant Managers	policy a		Safety			Workpla		M					Training for newly appointed assistant managers Training for Group leaders		elf-study	Corresp	
Group Leaders						Workplace organization	nts in the	Mental health							English	Correspondence training	
Sixth Year						nization	workplace	₫	  - 				Training for sixth- year employees		educatior	training	
Second Year						_						Business document writing	Training for third- year employees				
New Employees												<ul> <li>Upgrading customer relations</li> </ul>	Training for second- year employees				
													Training for new employees (On-the-job training)				

\* Follow-up implementation for section-chief-level employees who have not yet taken the course

- Further improving environments of local communities and work-
- places while sustaining activities aimed at protecting employee
- safety

# **Environmental Audits**

Every year, we conduct environmental and safety audits of all the Company's business sites in Japan as well as Group companies in Japan. In 1993, the scope of these audits was expanded to include overseas affiliates in Asia. Each business site periodically conducts an internal audit to promote maintenance and improvements based on an environmental management system compliant with ISO 14001.









Environmental and safety audits conducted by the Environment & Recycling Department

# **Environmental Education**

To further deepen understanding of environmental issues and chemical substances, SB School (e-learning) educational courses are implemented for all employees. In addition, each business site works in a planned and continuous manner to provide education on environmental issues and chemical substances for each level of employee. Principal topics include: relevant laws and regulations; environmental issues relevant to the company or business site; business site and departmental environmental policies as well as environmental objectives and targets; the handling of hazardous materials, organic solvents, and toxic substances; and the handling of chemical substances based on MSDSs. Going forward, plans call for concurrently proceeding with both e-learning courses for all employees and educational courses provided by each business site.



Environmental education (Kyushu Bakelite Co., Ltd.)



Energy conservation education (Shizuoka Plant)



Environmental education (Sumitomo Bakelite Singapore Pte. Ltd.)



E-learning

# While aiming for the goal of zero accidents and zero disasters, Sumitomo Bakelite strives to inspire still greater trust from all its stakeholders.

To ensure the safety of employees, maintain the trust of local communities, and maintain stable supplies of products to customers, it is crucial to prevent such accidents as fires, explosions, and releases of harmful chemicals into the environment. Each business site of the Sumitomo Bakelite Group prepares an accident prevention plan in line with the nature of each site's manufacturing and other operations and conducts equipment inspections as well as accident prevention training and drills to prevent accidents from happening. With an eye to minimizing the damage from accidents that do occur, countermeasures are planned and rehearsed.

# Safety and accident prevention activities at Group business sites



Initial fire extinguishing training (Shizuoka Plant)



Emergency rice-cooking practice (Shizuoka Plant)



Exhibition of firefighting skills by the Amagasaki City volunteer firefighter group (Amagasaki Plant)



Disaster countermeasure drill (Kyushu Bakelite Industry Co., Ltd.)



Cooperative training with the Gojo Fire Department (Nara Plant)



First-aid study group (Kobe Fundamental Research Laboratory)



Chemical leak recovery rehearsal (Akita Sumitomo Bakelite Co., Ltd.)

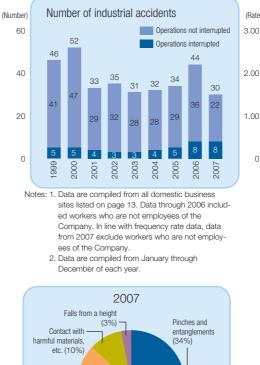
# We are striving to create healthy and pleasant workplaces by supplementing previous education and training programs with a growing number of facility risk reduction measures.

The Sumitomo Bakelite Group has long worked to promote occupational safety and health based on management and labor cooperation. In addition to such initiatives as hazard prediction, "pointing and calling" gesture- and vocalization-based autonomous safety confirmation processes, and "near accident" dangerous incident analysis reports, we have, in recent years, repeatedly reevaluated our 5S activities programs. Nevertheless, in view of the damage from a nearly fatal accident, it has become necessary to recognize that these initiatives were not as efficacious as expected. To overcome this problem, we have supplemented our previous training programs with other programs centered on strengthened machinery- and equipment-related countermeasures. In October 2006, we formulated our Safety Related Standards for Machinery and Equipment to serve as internal regulations in this regard, and we are moving ahead with additional facility risk reduction measures based on international machinery safety standards. Specifically, we have conducted risk assessments for all existing equipment at domestic business sites, identified equipment with relatively high risk levels, and begun taking measures to reduce those risks. Since April 2007, we have been preparing to obtain OHSAS 18001 health and safety management system certification for our eight principal domestic business sites. By supplementing previous education and training measures with equipment-centered countermeasures in line with international standards, then further reinforcing those measures by undertaking the continuous improvement of health and safety management systems, we are seeking to reduce the possibility of labor accidents and related management risks. By implementing equipment-centered risk reduction countermeasures in accordance with plans, we are realizing additional progress in the creation of safe workplaces.

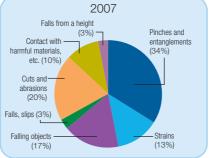
Trends in the number of industrial accidents and frequency rates, including data for our affiliates, are presented in the graphs below. In fiscal 2007, we achieved a 25% year-on-year reduction in the total number of accidents, although the level of accidents

remained comparable to the level in previous years. The rate of accidents rose back up to the level recorded six years ago, reflecting the relatively high incidence of accidents at facilities formerly operated by Tsutsunaka Plastic Industry Co., Ltd.

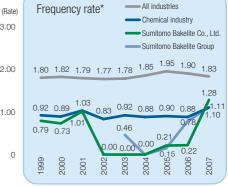
The pie charts to the right show the number and rates of different types of accidents over the past two years. In fiscal 2007, although the number of "pinches and entanglements" decreased slightly, this category continued to constitute the highest number of accidents. We are striving to accelerate the additional facility risk reduction measures that we have begun taking, with the objective of achieving a clear reduction in accidents.





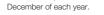


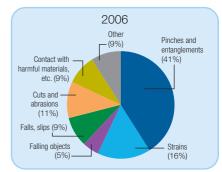
Note: Data are collected for January through December



\* Frequency rate = (Deaths and injuries/total working hours) x 1,000,000

Notes: 1. Data are compiled from all domestic business sites listed on page 13, and exclude workers who are not employees of the Company. Group data have been compiled only since 2003 2. Data are compiled from January through





Note: Data are collected for January through December

# Occupational safety and health initiatives at Group business sites



Safety and health course (Shizuoka Plant)



Risk assessment training (Shizuoka Plant)



Risk assessment education (Shizuoka Plant)



Risk assessment supervisor training (Kyushu Bakelite Industry Co., Ltd.)



Safety education for newly introduced equipment (Amagasaki Plant)



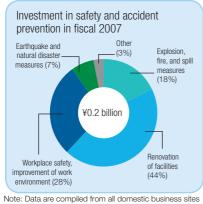
Making work environment measurements (Kyushu Bakelite Industry Co., Ltd.)



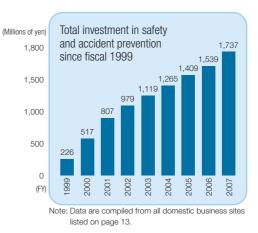
Safety countermeasures for pulverizer (Amagasaki Plant)

# Investment in Safety and Accident Prevention Initiatives

The Sumitomo Bakelite Group continually invests in safety and accident prevention initiatives. In fiscal 2007, we invested ¥0.2 billion in measures that were focused on improving aging facilities, workplace safety, and the work environment. Since fiscal 1999, the Sumitomo Bakelite Group has invested a total of ¥1.7 billion in such measures.



te: Data are compiled from all domestic business sites listed on page 13.



Sumitomo Bakelite engages in quality management activities on a Companywide level to enhance customer satisfaction by providing its customers with quality products and services that they can use with peace of mind.

## Sumitomo Bakelite's Quality Assurance System

In all processes, from product planning, product design, manufacturing preparations, manufacturing, and sales and service, the divisions involved cooperation in working to maintain and improve quality to provide products that satisfy customers and can be used with peace of mind.

## Quality Management System

Sumitomo Bakelite and its domestic and overseas business sites develop quality management systems based on ISO 9001 standards and work to acquire certification. We also work toward acquiring ISO 13485 certification for medical devices, which have additional requirements not covered by ISO 9001. Moreover, the Company is likewise working to obtain ISO/TS16949 certification, which includes particular requirements for the application of ISO 9001 for automotive-related products, for our auto parts. As of July 31, 2008, the Company and 36 other Group companies, including 17 domestic business sites and 19 overseas business sites, had acquired certification.

# Quality Management Policy for the Current Fiscal Year

All employees of Sumitomo Bakelite and the rest of the Sumitomo Bakelite Group are systematically implementing quality assurance measures based on quality management systems. In view of this, we have established the following quality management policy.

• Fundamental Policy

All employees of the Sumitomo Bakelite Group strive to provide products and services based on consideration of customers' perspectives while continually moving forward with the creation of flexible business structures that anticipate future changes in markets.

#### Measures

- 1. Further raise the level of customer satisfaction
- 2. Reduce/avoid product quality related risks
- 3. Assure quality regarding own-processes (processes one is directly involved with)
- 4. Lower costs of errors

The following sections offer a general description of these measures.

## Further Raise the Level of Customer Satisfaction

After gaining a good understanding of the things customers want, all activities—from product design and development through manufacturing, quality assurance, marketing, and service provision—are executed with an eye to providing those things. In this way, we are moving forward with efforts to provide the products customers want in a timely manner.

#### Reduce/Avoid Product Quality-Related Risks

(1) After analyzing risks associated with processes from product design and development through manufacturing and marketing, we implement measures to reduce or avoid product quality related risks. In new product development—particularly at the design/development and commercialization stages—we are seeking to realize highly finished product and process designs by using failure mode and effect analysis (FMEA) regarding raw materials, designs, and manufacturing processes; analyzing risks related to commercialization process operations; and then incorporating risk reduction and risk avoidance measures in new product development plans, in advance of their implementation. In addition, before they are implemented, designs are assessed regarding whether they fully meet customer needs and whether they ensure product safety.





(2) To ensure product safety, we periodically implement quality audits, and we also implement Companywide consciousness-raising campaigns regarding quality management activities and product safety countermeasures.

(3) Customer complaint and claim information is funneled through a Companywide quality information system and distributed without delay to relevant departments, who work to share this information. Based on this and other information at their disposal, the relevant departments work to identify the real causes of problems and then undertake horizontally integrated campaigns to prevent the recurrence of such problems. In addition, we are working to renovate these systems with the goal of further expanding and strengthening them.

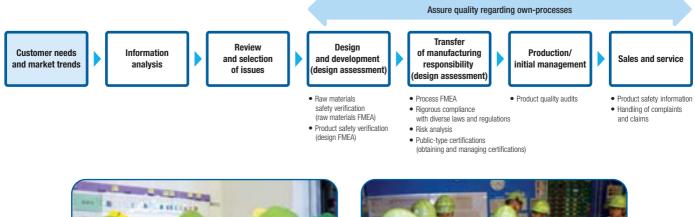
(4) To ensure product safety, the Company obtains public-type certifications for many of its products. When necessary, plans call for obtaining such certification for new products provided to customers going forward. We are taking measures to further augment and strengthen our systems for appropriately obtaining and managing such certifications.

(5) To promote the proper and safe use of our products by customers, Sumitomo Bakelite issues Material Safety Data Sheets (MSDSs) for its products and also works to provide product-related information through such media as product catalogs and product use explanation brochures.

## Assure Quality Regarding Own-Processes (Processes One Is Directly Involved With)

In its day-to-day manufacturing operations, Sumitomo Bakelite has introduced the Toyota Production System and employs Sumitomo Bakelite Production System (SBPS) activities to progressively improve product quality. One of the fundamental SBPS concepts is own-process quality assurance (not allowing quality problems to move to the next process). Rather than being restricted to production processes, own-process quality assurance activities relate to a full range of business processes —from raw material procurement through product design/development, quality assurance/inspection, and marketing and services—and these activities are implemented relentlessly.

Rather than involving only quality assurance units, Sumitomo Bakelite works to move ahead with the reevaluation and strengthening of its quality assurance systems through the concerted efforts of quality assurance units as well as design/development units, procurement units, production units, marketing units, and other units. In this way, we are striving to reduce and avoid product quality risks, satisfy customer needs, and provide products and services that can be used with peace of mind.





Sumitomo Bakelite Production System (SBPS) activities (Shizuoka Plant)

Each Sumitomo Bakelite Group company proactively undertakes exchanges with local communities.

# Overseas



As an active participant in the Social Responsibility Committee (SRC), Sumitomo Bakelite aims to improve the living environment around industrial zones. (Sumitomo Bakelite Vietnam Co., Ltd.)



As a part of its social contribution activities, Sumitomo Bakelite arranges for its employees to visit orphanages and undertake interior cleaning and refurbishment activities. The Company's employees also cooperate in regional blood collection drives. (Sumitomo Bakelite Singapore Pte. Ltd.)

# Japan









Sumitomo Bakelite engages in diverse activities designed to contribute to local communities. These include campaigns to clean up areas around the Company's plants and dormitories, to clean up nearby streams and rivers, and to help communities wipe out illegal dumping. (Shizuoka Plant)





Sumitomo Bakelite arranges for residents of local communities to make study visits to its plants and proactively conducts various other initiatives to promote greater dialogue with local communities. (Amagasaki Plant)



Sumitomo Bakelite employees carefully groom areas near the Company's plants. (Nara Plant)

# Awards



At the general meeting of the Shizuoka Industrial Waste Association, Sumitomo Bakelite received the Governor's Award from the governor of Shizuoka Prefecture in recognition of its efforts to promote the proper handling of industrial waste products during fiscal 2007. (Shizuoka Plant)



Sumitomo Bakelite received an award from Singapore's national water agency (PUB) for its continuation of a campaign to limit flows from water faucets. (Sumitomo Bakelite Singapore Pte. Ltd.)



Sumitomo Bakelite's Utsunomiya Plant received an award from the Kanto-Koshinetsu Association for Safety of Hazardous Materials for outstanding performance in legal compliance regarding the construction and modification of hazardous materials facilities, in day-to-day hazardous materials management, and in disaster prevention organization. (Utsunomiya Plant)

# **Responses to Environmental Complaints**

Sumitomo Bakelite responds promptly to diverse complaints from residents of local communities.

Category	Date	Business site	Complaint	Cause and response
Odor	Oct. 2007	Shizuoka Plant	A local company reported a strong chemical smell.	A visit was made to the resident's home but the passage of time made it impossible to confirm the odor. Arrangements were made to respond immediately to the next incidence of odor to confirm the odor, discover the cause, and take countermeasures.
Odor	Mar. 2008	Artlite Kogyo Co., Ltd.	A local resident reported a chemical smell.	A painting line drier unit was releasing gases in the direction of residences. The position of the exhaust duct was changed and the exhaust volume was adjusted. No complaints were subsequently received.
Noise	Sept. 2007	Amagasaki Plant	A local resident reported that "a continuous loudspeaker noise during the night made it impossible for some local residents to get sufficient sleep."	It was determined that there was a high possibility that the problem was caused by a sound alarm in the 9V plant. After the direction of the loudspeaker was changed and the volume turned down, the problem was eliminated.
Noise	Sept. 2007	Akita Sumitomo Bakelite Co., Ltd.	A local resident reported a booming noise.	Annual combustion testing of steam boilers entailed a "purge test" that involves the release of steam into the atmosphere. This purge test was causing the booming noise. It was decided to eliminate outside purge testing beginning from the next annual round of combustion testing.
Other	May 2007	Y-Techs Co., Ltd.	The local authorities reported that water leaking from the plant and accumulating on a sidewalk was likely to freeze in the winter and cause dangerous conditions and requested that countermeasures be quickly implemented to correct the situation.	The cause was a crack in a corner joint of the regulating pond that had deteriorated with age. A wastewater gutter was equipped with gratings to prevent leaking water from reaching the sidewalk.
Other	Jul. 2007	Akita Sumitomo Bakelite Co., Ltd.	An envelope addressed to the Company was found in illegally dumped trash and a request was made to clean up the trash.	That same day, the dumping site was confirmed and cleaned up.
Other	Aug. 2007	Shizuoka Plant	A local resident requested that the schedule for spraying chemicals on trees within the plant compound be changed.	The Company explained the need to spray at times when caterpillars proliferated in cherry trees, and the resident under- stood the difficulty of changing the spraying schedule.
Other	Sept. 2007	Y-Techs Co., Ltd.	A local resident reported that weeds thriving on a slope within the plant compound were unsightly and requested that they be tidied up.	Insufficient mowing on the slope had allowed weeds to grow to unsightly proportions. Measures were promptly taken to mow that portion.



#### Independent Review Report on "Environmental & Social Report 2008"

To the Board of Directors of Sumitomo Bakelite Co., Ltd.,

1. Purpose and Scope of our Review

We have reviewed "Environmental & Social Report 2008" ("the Report") of Sumitorns Bakelite Co., Ltd. ("the Company") for the year ended March 31, 2008. Our engagement was designed to report to the Company, based on the results of our review, whether the environmental and social performance indicators and the environmental accounting indicators ("the Indicators") for the period from April 1, 2007 to March 31, 2008 included in the Report are collected, compiled and reported, in all material respects, rationally and in conformance with the Company's policies and standards; and whether all the material sustainability information defined by the Japanese Association of Assurance Organizations for Sustainability Information ("J-SUS") is included in the Report.

The Report, including the identification of material issues, is the responsibility of the Company's management. Our responsibility is to independently report the results of our procedures performed.

2. Procedures Performed

We have performed the following review procedures:

- With respect to the Company's policies for compilation of the Report, interviewed the Company's responsible personnel.
- Assessed the Company's standards used for collecting, compiling and reporting the Indicators.
- With respect to the way of collecting the Indicators and the process flow of calculating them, interviewed the Company's responsible personnel and reviewed the systems and processes used to generate the values of the Indicators.
- Compared the indicators on a sample basis with the supporting evidences to test the conformity in collection, compilation and reporting of the indicators to the Company's policies and standards, and recomputed the indicators.
- Made an on-site inspection of the Company's domestic facility.
- Assessed whether all the material sustainability information defined by 3-SUS is included in the Report.
- Evaluated the overall statement in which the indicators are expressed.

We conducted our engagement in accordance with Assurance Standard for Environmental Reports (pilot version) of Ministry of the Environment (March 2004) and the Practical Guidelines of Statianability Information Assurance of J-SUS (revised February 2008).

#### 3. Results of the Procedures Performed

Based on our review, nothing has come to our attention that causes us to believe that the Isdicators in the Report are not collected, compiled and reported, in all material respects, rationally and in conformance with the Company's policies and procedures, and that all the material sustainability information defined by J-SUS is not included in the Report.

KPMG AZSA Scuteinability Co, Utd.

KPMG AZSA Sustainability Co., Ltd.

Tokyo, Japan September 5, 2008

## Comment from Independent Reviewer

This year's report clearly explains the Group's procedure for assessing and monitoring soil and groundwater contamination, the results of the assessments conducted, and how it responded to cases in which contaminations were detected. Detailed information is also provided on its initiatives and performance in relation to occupational health and safety. Disclosure of other social performance indicators has also improved from the previous report.

Having said that, the information on the Group's social aspects currently provided in the report is far from complete. We believe that the Company needs to carefully select topics and performance indicators to be disclosed, taking into account the "materiality" of information to the Group and its stakeholders, in order for the Company to further improve its disclosure on the Group's social aspects.

It may be pointed out that the Group's overseas operations have considerable relevance to its CSR performance. For example, its overseas facilities now emit more CO<sub>2</sub> emissions than its domestic facilities, and the number of overseas employees is greater than that of domestic employees. This year's report, however, contains little information on its overseas operations. Expanding the information on the initiatives and performance of its overseas operations is certainly an issue for the Company and needs to be dealt with in future reports.

Kazuhiko Saito KPMG AZSA Sustainability Co., Ltd.





25

20

20

8.9

8.4

2.1

# The tables below provide environmental impact data related to air and water quality for each Sumitomo Bakelite business site in Japan.

# Amagasaki Plant

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	SO <sub>x</sub>	m³N/h	2.93	Less than 0.02
	NO <sub>x</sub>	ppm	250	55.4
	Soot and dust	g/m³N	0.3	Less than 0.002

 
 Water> Emissions into public water areas

 Item
 Unit
 Regulatory limit
 Actual measurement

 pH
 —
 5.8–8.6
 6.9–7.8

 BOD
 mg/L
 25
 12.0

mg/L

mg/L

n-hexane extract mg/L

Item	Unit	Regulatory limit	Actual measurement
pH	—	5.7–8.7	5.1*1-8.7
BOD	mg/L	300	500*2
Suspended solids	mg/L	300	360*3
n-hexane extract	mg/L	30	24

\*1 This measurement was due to waste material becoming attached to the electrodes. \*2 The grease traps and other equipment are cleaned periodically because grease and other

substances enter effluent from the kitchens. \*3 This measurement was due to the malfunctioning of a pump for transferring polluted water,

and effluent accumulated for a long period.

# Kanuma Plant

<Air>

COD

Suspended solids

Facility	Item	Unit	Regulatory limit	Actual measurement		
Boiler	NO <sub>x</sub>	ppm	180	120		
	Soot and dust	g/m³N	0.30	0.017		
<water> Emis</water>	Water> Emissions into public water areas					

Item	Unit	Regulatory limit	Actual measurement
рН	—	5.8-8.6	6.6–7.5
n-hexane extract	mg/L	5	1.7

# Nara Plant

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	NO <sub>x</sub>	ppm	100	79
	Soot and dust	g/m³N	0.10	0.01

<Water> Emissions into public water areas

Item	Unit	Regulatory limit	Actual measurement
рН	—	5.6-8.4	6.9–7.8
BOD	mg/L	50	7.3
COD	mg/L	50	4.8
Suspended solids	mg/L	20	2

# Shizuoka Plant

Facility	Item	Unit	Regulatory limit	Actual measurement
Cogenera-	NO <sub>x</sub>	ppm	100*4	41
tion boiler	Soot and dust*5	g/m³N	0.05	Less than 0.02

\*4 The regulatory limit for NO<sub>s</sub> was changed from 70 ppm to 100 ppm. \*5 Soot and dust are measured once every five years.

<Water> Emissions into public water areas

Item	Unit	Regulatory limit	Actual measurement
рН	—	5.8–8.6	7.1–7.7
BOD	mg/L	15	2.1
Suspended solids	mg/L	30	7.2
n-hexane extract	mg/L	3	Less than 0.5
Phenols	mg/L	1	Less than 0.05
Formaldehyde	mg/L	5	0.2

# Utsunomiya Plant

Facility	Item	Unit	Regulatory limit	Actual measurement		
Drying	SO <sub>x</sub>	m³N/h	1.22	Less than 0.019		
furnace	Soot and dust	g/m³N	0.2	Less than 0.001		
<water> Emis</water>	Water> Emissions into public water areas					

Item	Unit	Regulatory limit	Actual measurement
рН	_	5.8-8.6	7.6–7.9
BOD	mg/L	25	0.7
COD	mg/L	25	3.6
Suspended solids	mg/L	25	Less than 1
n-hexane extract	mg/L	5	Less than 1

#### Tsu Plant

<Air> No relevant facilities

<Water> Released into sewers

Item	Unit	Regulatory limit	Actual measurement
pH	—	5.0–9.0	6.4–7.7
BOD	mg/L	600	40
n-hexane extract (liquid petroleum)	mg/L	5	0.6
n-hexane extract (animal and plant oils)	mg/L	30	4.2
Suspended solids	mg/L	600	43
Total nitrogen	mg/L	240	8.3
Total phosphorus	mg/L	32	0.41
Ammoniacal nitrogen	mg/L	380	7.0
Nitrate-nitrogen as well as nitrite-nitrogen	mg/L	380	0.8

#### **Fundamental Research Laboratory**

<Air> No relevant facilities

<Water> Released into sewers

Item	Unit	Regulatory limit	Actual measurement
рН	—	5–9	7.3–8.5
Total cyanide	mg/L	1	Less than 0.1
Phenols	mg/L	0.5	Less than 0.05
Fluorine and its compounds	mg/L	10	Less than 1
Boron and its compounds	mg/L	8	Less than 1
n-hexane extract	mg/L	5	Less than 1
Dichloromethane	mg/L	0.2	Less than 0.02
1,2-dichloroethane	mg/L	0.04	Less than 0.004

#### Kobe Fundamental Research Laboratory

<Air> No relevant facilities<Water> Beleased into sewers

Item	Unit	Regulatory limit	Actual measurement
pH	—	5–9	7.2–7.8
BOD	mg/L	2,000	1
Suspended solids	mg/L	2,000	3
n-hexane extract	mg/L	5	Less than 1.0

Notes: 1. In cases where there are multiple facilities subject to regulations, we have listed the facility discharging the largest amount of gas emissions.

- Regarding regulatory limits, we have listed the most stringent of municipal ordinances, community agreements, and administrative guidance.
- Actual measurements are the largest values observed in fiscal 2007. Regarding pH, the lowest and highest values are listed.
- 4. Actual measurements listed as "less than" indicate a measurement smaller than the lowest measurable value.

### Akita Sumitomo Bakelite Co., Ltd.

<Air>

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	SO <sub>x</sub>	m³N/h	3.18	0.30
	NO <sub>x</sub>	ppm	110	42
	Soot and dust	g/m³N	0.09	Less than 0.01
Water> Emissions into public water areas				

Item	Unit	Regulatory limit	Actual measurement
рН	—	6.0-8.5	6.8–7.5
BOD	mg/L	30	26.0
COD	mg/L	30	18.0
Suspended solids	mg/L	40	10.0
Phenols	mg/L	0.5	0.02
Copper	mg/L	1.0	0.55
Cyanide compounds	mg/L	0.1	Less than 0.01
Lead and its compounds	mg/L	0.1	Less than 0.01
Soluble manganese	mg/L	5	Less than 0.03

# Artlite Kogyo Co., Ltd.

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	SO <sub>x</sub>	m³N/h	4.38	0.06
	NO <sub>x</sub>	ppm	180	92
	Soot and dust	g/m³N	0.30	0.004

<Water> Emissions into public water areas

Item	Unit	Regulatory limit	Actual measurement
рН	—	5.8–8.6	6.0–7.7
BOD	mg/L	160	2.0
COD	mg/L	30	3.3
COD (total)	kg/day	27.1	0.3
Suspended solids	mg/L	200	Less than 5
n-hexane extract	mg/L	5	Less than 2
Phenols	mg/L	5	Less than 1
Total nitrogen	mg/L	40	5.9
Total phosphorus	mg/L	2	0.040

## S.B. Techno Plastics Co., Ltd. (Head Office Plant)

<Air> No relevant facilities

<Water> Emissions into public water areas

Item	Unit	Regulatory limit	Actual measurement
рН	—	5.8–8.6	6.8–8.6
BOD	mg/L	20	11.6
Suspended solids	mg/L	50	20

#### Yamaroku Kasei Industry Co., Ltd.

<Air> No relevant facilities

<Water> Emissions into public water areas

Item	Unit	Regulatory limit	Actual measurement
pH	—	5.8-8.6	7.1
BOD	mg/L	25	2
COD	mg/L	25	4
Suspended solids	mg/L	90	2
Phenols	mg/L	5	Less than 0.01

## Kyushu Bakelite Industry Co., Ltd.

<Air>

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	SO <sub>x</sub>	m³N/h	0.63	0.21
	NO <sub>x</sub>	ppm	180	64
	Soot and dust	g/m³N	0.30	0.030
Water> Emissions into public water areas				
			Regulatory	Actual

Item	Unit	Regulatory limit	Actual measurement
pH	—	5.8–8.6	6.9–7.6
BOD	mg/L	160*6	20.0
COD	mg/L	80*6	19.0
Suspended solids	mg/L	100*6	Not detectable
n-hexane extract (mineral oil)	mg/L	2.5*6	Not detectable

\*6 Regulatory limits were relaxed beginning in December 2007, following a review of the agreement with the City of Nogata.

### Suzuka Plant, Decolanitto Co., Ltd.

<Air>

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	SOx	m³N/h	3.57	0.11
	NO <sub>x</sub>	ppm	150	102
	Soot and dust	g/m³N	0.25	Less than 0.005

#### <Water> Emissions into public water areas

Item	Unit	Regulatory limit	Actual measurement
рН	—	5.8-8.6	6.8–7.4
BOD	mg/L	130	10
COD	mg/L	130	9
Suspended solids	mg/L	130	2

#### Kyodo Co., Ltd.

#### <Air> No relevant facilities

<Water> Emissions into public water areas

Item	Unit	Regulatory limit	Actual measurement
рН	—	5.8-8.6	7.5–8.2
BOD	mg/L	25	Not detectable
COD	mg/L	25	2
Suspended solids	mg/L	90	Not detectable

Notes: 1. In cases where there are multiple facilities subject to regulations, we have listed the facility discharging the largest amount of gas emissions.

- Regarding regulatory limits, we have listed the most stringent of municipal ordinances, community agreements, and administrative guidance.
- Actual measurements are the largest values observed in fiscal 2007. Regarding pH, the lowest and highest values are listed.
- 4. Actual measurements listed as "less than" indicate a measurement smaller than the lowest measurable value. Actual measurements listed as "not detectable" indicate a measurement below the minimum detection level.



The tables below provide environmental impact data related to air and water quality for each overseas Group business site.

#### Sumitomo Bakelite Singapore Pte. Ltd. (Singapore)

<Air> No relevant facilities

<water></water>		Desudates	Astrol
Item	Unit	Regulatory limit	Actual measurement
рН	-	6–9	6.0-7.9
BOD	mg/L	400	90
COD	mg/L	600	230
Suspended solids	mg/L	400	36
Phenols	mg/L	0.5	0.02
Temperature	°C	45	29
Chlorine	mg/L	1,000	35
Sulfate	mg/L	1,000	23
Sulfur	mg/L	1	0.1
Cyanide compounds	mg/L	2	0.01
Linear alkylate sulphonate	mg/L	30	6
Oil and grease	mg/L	60	Less than 1
Arsenic and its compounds	mg/L	5	Less than 1
Barium	mg/L	10	Less than 1
Tin	mg/L	10	Less than 1
Soluble iron	mg/L	50	1
Beryllium	mg/L	5	Less than 1
Boron	mg/L	5	Less than 1
Soluble manganese	mg/L	10	Less than 1
Cadmium	mg/L	1	Less than 0.1
Chromium	mg/L	5	Less than 1
Copper	mg/L	5	Less than 1
Lead	mg/L	5	Less than 1
Mercury	mg/L	0.5	Less than 0.01
Nickel	mg/L	10	Less than 1
Selenium	mg/L	10	Less than 1
Silver	mg/L	5	Less than 1
Zinc	mg/L	10	Less than 1

SNC Industrial Laminates Sdn. Bhd. (Malaysia) <Air>

Facility	Item	Unit	Regulatory limit	Actual measurement
Exhaust gas	SO <sub>x</sub>	g/m³N	0.2	0.070
combustion	NO <sub>x</sub>	g/m³N	2.0	0.030
unit	Soot and dust	g/m³N	0.4	0.100
<water></water>				

Regulatory Actual Item Unit limit measurement Hq 5.5-9.0 5.6-8.0 BOD mg/L 50 45 COD 100 98 mg/L Suspended solids 100 13 mg/L Less than 0.1 Phenols mg/L 1.0 °C 40 Temperature 29.9 Mercury mg/L 0.05 Less than 0.02 Cadmium 0.02 Less than 0.01 mg/L Hexavalent chromium compounds mg/L 0.05 Less than 0.05 0.10 Less than 0.05 Arsenic mg/L Cyanide compounds 0.10 Less than 0.05 mg/L 0.5 Less than 0.05 Lead mg/L 1.0 Less than 0.1 Trivalent chromium compounds mg/L Copper mg/L 1.0 0.14 Soluble manganese 1.0 0.10 mg/L Nickel mg/L 1.0 Less than 0.1 Tin 1.0 Less than 0.5 mg/L Zinc 1.0 0.9 mg/L 4.0 0.2 Boron mg/L Soluble iron 5.0 2.0 mg/L 2.0 Chlorine mg/L Less than 0.1 Sulfur mg/L 0.50 Less than 0.4 Oil and grease mg/L 10.0 Less than 5

#### P.T. Indopherin Jaya (Indonesia)

<Air> No relevant facilities

Item	Unit	Regulatory	Actual
		limit	measurement
рН	—	6–9	6.8-8.3
BOD	mg/L	100	38
COD	mg/L	300	75
Suspended solids	mg/L	100	42
Total nitrogen	mg/L	30	8.7
Phenols	mg/L	1	0.17

#### P.T. SBP Indonesia (Indonesia)

<Air> No relevant facilities

<Water>

Item	Unit	Regulatory limit	Actual measurement
Temperature	°C	40	30
Total dissolved solids	mg/L	4,000	228
Suspended solids	mg/L	400	20
pH	—	5.5–9.5	7.0–7.3
Iron	mg/L	10	Less than 0.06
Manganese	mg/L	4	Less than 0.02
Barium	mg/L	4	Less than 0.1
Copper	mg/L	4	Less than 0.02
Zinc	mg/L	10	0.07
Hexavalent chromium	mg/L	0.2	Less than 0.01
Chromium compounds	mg/L	1	Less than 0.02
Cadmium	mg/L	0.1	Less than 0.003
Mercury	mg/L	0.004	Less than 0.0005
Lead	mg/L	0.2	Less than 0.01
Tin	mg/L	4	Less than 0.4
Arsenic	mg/L	0.2	Less than 0.005
Selenium	mg/L	0.1	Less than 0.002
Nickel	mg/L	0.4	Less than 0.02
Cobalt	mg/L	0.8	Less than 0.02
Cyanogen	mg/L	0.1	Less than 0.005
Hydrogen sulfide	mg/L	0.1	Not detectable
Fluorine	mg/L	4	0.48
Chlorine	mg/L	2	0.08
Ammoniac nitrogen	mg/L	2	0.07
Nitrate-nitrogen	mg/L	40	1.5
Nitrite-nitrogen	mg/L	2	0.41
BOD	mg/L	200	21
COD	mg/L	400	59
Methylene blue active substance	mg/L	10	0.25
Phenols	mg/L	1	Less than 0.001
Oil and grease	mg/L	10	Less than 0.2

#### Sumitomo Bakelite (Taiwan) Co., Ltd. (Taiwan)

<Air> No relevant facilities

Item	Unit	Regulatory limit	Actual measurement
pH	—	6–9	7.3–7.8
COD	mg/L	600	187
Suspended solids	mg/L	300	58

Notes: 1. Regarding facilities affecting air quality, in cases where there are multiple facilities subject to regulations, we have listed the facility discharging the largest amount of gas emissions.

2. Regarding regulatory limits, we have listed the most stringent of municipal ordi-

nances, community agreements, and administrative guidance. 3. Actual measurements are the largest values occurring in fiscal 2007. Regarding pH,

 the lowest and highest values are listed.
 Actual measurements listed as "less than" indicate a measurement smaller than the lowest measurable value. Actual measurements listed as "not detectable" indicate a measurement below the minimum detection level.

N.V. Sumitomo	Bakelite	Europe	S.A.	(Belgium)

<Air>

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	NO <sub>x</sub>	mg/m³N	425	95
<water></water>				
lt	em	Unit	Regulatory limit	Actual measurement
pН		—	6–9	6.2–7.5
COD		mg/L	136	Less than 15
Suspended so	olids	mg/L	1,000	Less than 10
TOC		mg/L	50	1.5
Phenols		mg/L	3	Less than 1
Chlorendic ac	id	mg/L	3	Less than 0.1
Hexachlorocy	clopentadiene	mg/L	0.005	Less than 0.005
Monochlorobe	enzene	mg/L	5	Less than 1
Total nitrogen		mg/L	15	Less than 0.97
Total phospho	orus	mg/L	3	Less than 0.05

Sumitomo Bakelite Europe (Barcelona) S.L.U. (Spain) <Air>

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	SO <sub>x</sub>	mg/m³N	4,300	Not detectable
	NO <sub>x</sub>	ppm	300	50
	CO	ppm	500	4

<Water>

Item	Unit	Regulatory limit	Actual
			measurement
рН	—	6–10	6.9-8.7
COD	mg/L	1,500	571
Suspended solids	mg/L	750	71
Phenols	mg/L	2	1.5
Conductivity	µs/cm	5,000	3,905
Total chlorine	mg/L	2,000	853
Total sulfide	mg/L	1,000	570
Total phosphorus	mg/L	50	2

# Sumitomo Bakelite Vietnam Co., Ltd. (Vietnam) <Air>

Facility	Item	Unit	Regulatory limit	Actual measurement
Boiler	CO	mg/m³N	1,500	110
	NO <sub>x</sub>	mg/m³N	2,500	19
	SO <sub>x</sub>	mg/m³N	1,500	43
	Soot and dust	mg/m³N	600	3

<Water>

Item	Unit	Regulatory limit	Actual measurement
рН	—	5.5–9.0	5.5–7.13
BOD	mg/L	50	43.7
COD	mg/L	80	92.0*
Suspended solids	mg/L	100	14.0
Copper	mg/L	2.0	1.7
Lead	mg/L	0.5	0.1
Nickel	mg/L	0.5	0.3
Soluble iron	mg/L	5.0	1.9

\* The in-house measurement was 44 mg/L.

# Durez Corporation (Kenton Plant) (U.S.A.)

<Air> No relevant facilities

<	٧V	a	le	~
	_	_	_	-

Item	Unit	Regulatory limit	Actual measurement
Phenols	µg/L	20	Less than 10

## Durez Corporation (Niagara Plant) (U.S.A.)

<Air> No relevant facilities

<Water>

Item	Unit	Regulatory limit	Actual measurement
Phenols	lbs./day	35	1.87
Drainage volume	million gal/day	0.1	0.084
Suspended solids	lbs./day	75	23
Soluble organic carbon	lbs./day	800	475
Phosphorus	lbs./day	17	0.03
pH	—	5–10	5–10

# Durez Canada Co., Ltd. (Fort Erie Plant) (Canada)

<Air> No measurement data </a>

Item	Unit	Regulatory limit	Actual measurement
pH		6.0–10.5	7.8–10.1
Suspended solids	mg/L	350	52–54
Phenols	mg/L	1.0	Less than 1.0

# Sumitomo Bakelite Macau Co., Ltd. (China)

<Air> No measurement data

Item	Unit	Regulatory limit	Actual measurement
рН		6–9	6.3-8.2
BOD	mg/L	40	31.0
COD	mg/L	150	110
Total suspended solids	mg/L	60	19
Oil and grease	mg/L	15.0	Less than 10
Phenols	mg/L	0.5	1.2
Lead	mg/L	1.0	0.01
Aluminum	mg/L	10.0	Less than 3
Arsenic	mg/L	1.0	Less than 0.002
Cadmium	mg/L	0.2	Less than 0.05
Copper	mg/L	1.0	Less than 0.1
Iron	mg/L	2.0	1.2
Manganese	mg/L	2.0	0.12
Mercury	mg/L	0.05	Less than 0.001
Zinc	mg/L	5.0	2.4
Nickel	mg/L	2.0	Less than 0.2
Selenium	mg/L	0.5	Less than 0.001
Carbon compounds	mg/L	1.0	3.4
Hexavalent chromium	mg/L	0.1	0.04
Chromium	mg/L	2.0	Less than 0.2
Sulfide	mg/L	1.0	1.6
Sulfate	mg/L	2,000.0	18
Subsulfate	mg/L	1.0	Less than 0.1
Phosphorus	mg/L	10.0	0.11
Ammonia	mg/L	10.0	0.39
Cyanide compounds	mg/L	0.5	Less than 0.1
Total nitrogen	mg/L	15.0	1.3
Nitrate	mg/L	50.0	0.58
Detergents	mg/L	2.0	0.36
Acetaldehyde	mg/L	1.0	Less than 0.1
HCH	mg/L	2.0	Less than 0.002
DDT	mg/L	0.2	Less than 0.002
PCP	mg/L	1.0	Less than 0.002
НСВ	mg/L	1.0	Less than 0.002
HCBD	mg/L	1.5	Less than 0.002
CBNTET	mg/L	1.5	Less than 0.001
Chloroform	mg/L	1.0	Less than 0.001
Tetrachloroethylene	mg/L	1.5	Less than 0.001
Aldrin	µg/L	2.0	Less than 2.0
Endrin	μg/L μg/L	2.0	Less than 2.0
Dieldrin		2.0	Less than 2.0
Isodrin	µg/L	2.0	Less than 2.0
	µg/L	5.0	Less man 2.0
Heavy metals	mg/L		*
Agricultural chemicals	pg/L	0.5	Î

\* Measurement will be made going forward.

- Notes: 1. Regarding facilities affecting air quality, in cases where there are multiple facilities subject to regulations, we have listed the facility discharging the largest amount of gas emissions.
  - Regarding regulatory limits, we have listed the most stringent of municipal ordinances, community agreements, and administrative guidance.
  - Actual measurements are the largest values occurring in fiscal 2007. Regarding pH, the lowest and highest values are listed.
  - 4. Actual measurements listed as "less than" indicate a measurement smaller than the lowest measurable value. Actual measurements listed as "not detectable" indicate a measurement below the minimum detection level.

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