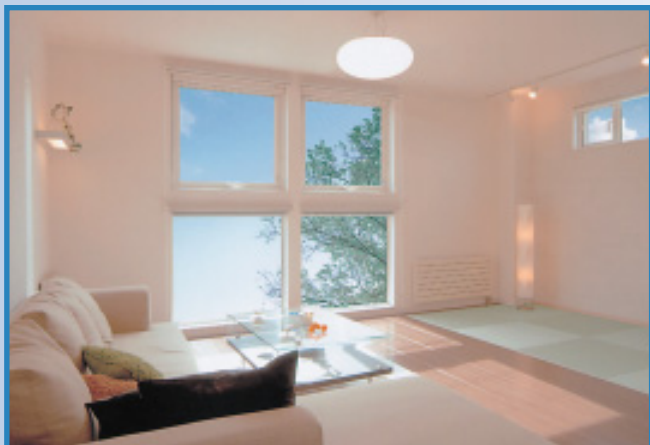


## Organic and Inorganic Chemicals



PVC is used in window profiles due to its superior heat insulation capabilities.



The superior adhesiveness, durability and deep hardening qualities of silicone-based, elastic joint sealing material make it effective for aquariums and other large-size water tanks.

### Net Sales of Main Products

(Billions of yen)

	2008	2007	2006
Polyvinyl chloride (PVC)	363.7	375.8	345.3
Silicones	199.7	198.8	176.5
Cellulose derivatives and others	137.6	133.8	114.7
<b>Total</b>	<b>701.0</b>	<b>708.4</b>	<b>636.5</b>

### Polyvinyl Chloride (PVC)



PVC is a commodity plastic resin having superior use properties, processability and economic advantages. Life-cycle assessment shows major environmental benefits, too: PVC manufacture requires less petroleum resources than other plastics manufacture,

because 60 percent of its raw material comes from common salt and only 40 percent from petroleum. Recycling is also progressing.

The highest-volume uses of PVC are in construction components, although it also has certain niche applications of very high value to our lives. Demand for PVC products in North America is primarily in the forms of pipes and sidings. In Europe and Asia, use for pipes and window frames is popular. For example, builders in Japan have recently begun using more PVC window frames due to their superior insulation performance, seasonally reducing costs of both heating and cooling of homes and contributing to reduction of global warming via reduced energy needs. Nowadays, demand is growing particularly strongly in China, mainly for construction materials as well as in consumer goods.

For all these reasons, global PVC demand continues to grow steadily and strongly, and to keep pace, we at Shin-Etsu are expanding our PVC production capacity at Shintech Inc. in the United States. In 2008, operations are scheduled to commence at our additional large-scale integrated PVC plant in Louisiana, which will handle all processes from the raw material stage onward. Besides Shintech, the Shin-Etsu Group will strengthen its PVC businesses in the Netherlands and elsewhere, going forward with tri-lateral bases positioned to best serve all world markets.

### Silicones



Silicones combine organic and inorganic properties and can take different physical forms, such as fluid, resin or rubber. Their numerous unique properties include electrical insulation, as well as heat, cold and weather resistance. We currently provide

more than 4,000 different silicone products for applications in a wide range of fields such as the electrical, electronics, automotive, construction, cosmetics, toiletries and chemical industries, and contribute to the improvement of functionality, rationalization and efficiency of production processes in numerous industries.

In recent years, growth has been steady in electrical and electronics applications that require thermally conductive silicone, and in cosmetics applications in addition to automobiles applications, where high functionality is increasingly required.

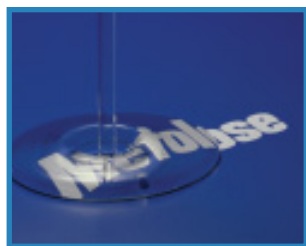
Replacing about 20 percent of our lineup each year, the Shin-Etsu Group aggressively develops new silicone products. Recently, we successively launched new products including super-low hard-

ness thermally conductive silicone rubber for dissipation, a silicone anti-foaming agent with excellent alkali-resistance and low-staining silicone sealant.

The Shin-Etsu Group is aggressively going forward on a global basis with the expansion of production and sales of silicones in the regions where demand is growing. In addition to its production bases in Japan, the United States, the Netherlands, Korea, Taiwan and China, the Shin-Etsu Group has been working to maintain stable operations at its integrated silicone monomer and polymer manufacturing facilities in Thailand.

The Shin-Etsu Group will continue to develop new products and new applications of silicone while utilizing its features that are in demand in a wide range of fields. In addition, the Group aims to expand overseas operations along with those in Japan.

## Cellulose Derivatives



Cellulose derivatives are an environmentally friendly material made from a natural polymer. Shin-Etsu has developed a wide array of cellulose derivative products that are used in diverse fields such as pharmaceutical coatings and binders for tablets

and granules, construction, civil engineering, agriculture, fine ceramics, paper processing, foods and toiletries.

Shin-Etsu is working to sequentially resume regular operations at the Naoetsu Plant's cellulose production facilities, where the March 2007 explosion and fire caused considerable concern among the many parties connected to the plant including local residents and our customers. In addition, construction is progressing

on new pharmaceutical cellulose production facilities at SE Tylose GmbH & Co. KG in Germany in order to stabilize supply by using multiple production bases.

## Organic and Inorganic Chemicals and Other Related Products



Female insects secrete a sex pheromone to attract males of the species. Shin-Etsu has developed a synthetic sex pheromone to disrupt mating behaviors and, as a result, to suppress the population of the next generation. In Europe and

North America, they are widely used in fruit orchards, such as apple, peach and grape. In Japan, they are used mainly in fruit orchards as well as in vegetable fields, such as cabbage, and in tea fields. Mating disruption is now expected as an alternative technique to insecticides. Shin-Etsu has the world's top market share in this field and will continue to expand sales worldwide. In addition, Shin-Etsu supplies acetylene derivatives as aroma chemicals for fragrances and food flavorings.

The Shin-Etsu Group also manufactures silicon metal, an essential raw material in such products as semiconductor silicon, silicones and synthetic quartz, which are among the Group's core businesses. Simcoa Operations Pty. Ltd., a wholly owned subsidiary in Western Australia produces 30,000 tons of high-quality silicon metal annually. Simcoa also has long-term mining rights of silica, which is a raw material of silicon metal. Shin-Etsu has secured a stable, long-term supply of quality silicon metal while demand is tightening globally.

### Topics

## Shintech Nearing Start of Operations at Integrated PVC Plant under Construction in Louisiana

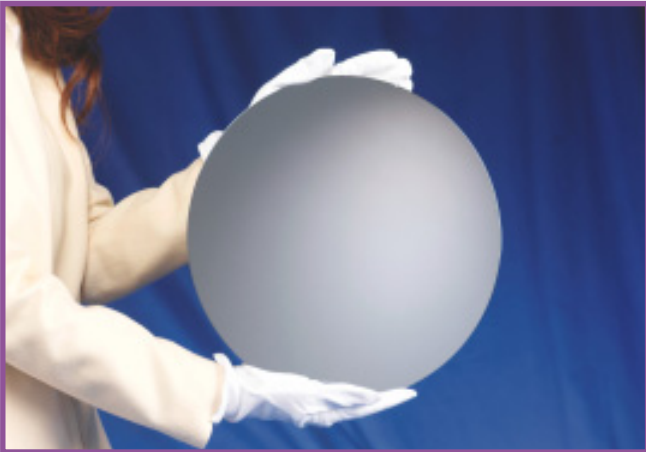


Shintech Inc. has started trial operations at its new plant at Plaquemine, Louisiana. Thanks to highly strategic property acquisition, the site has a salt dome as well as long, navigable Mississippi River frontage. Thus, the plant is totally integrated vertically, every step from mining salt and electrolysis, to producing PVC monomers, PVC resin and caustic soda.

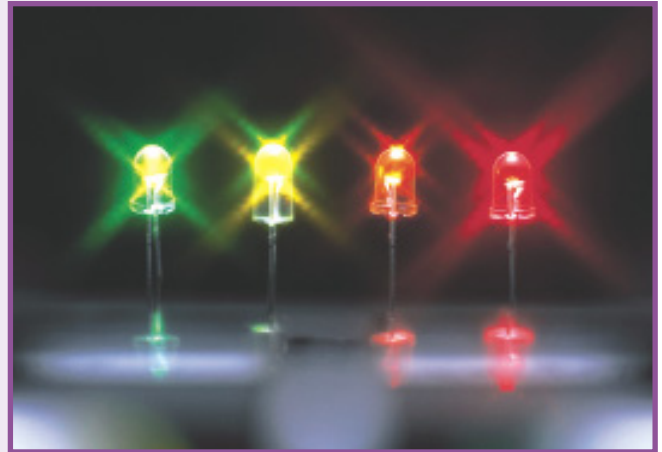
Commercial operation of the first of two stages is scheduled to start during 2008, with construction being phased to closely track growth in global PVC demand. Annual production of first phase at Plaquemine will be 300,000 tons of PVC resin, raising Shintech's total capacity to 2.3 million tons annually and solidifying the company's position as the largest PVC manufacturer in the United States.

Shintech has also agreed on renewal of its long-term materials procurement contract with Dow Chemical Company, further strengthening the close long-standing partnership between Shin-Etsu and Dow, and extending it to more than half a century.

## Electronics Materials



Silicon wafers boast a degree of evenness to within 100 nanometers.



Epoxy molding compounds, which are silicone variations, are necessary materials for high-intensity LEDs.

### Net Sales of Main Products

(Billions of yen)

	2008	2007	2006
Semiconductor silicon	482.8	406.7	305.7
Others	81.9	72.7	55.7
Total	564.7	479.4	361.4

### Semiconductor Silicon



The Shin-Etsu Group is the world's leading silicon wafer supplier, with a worldwide market share of approximately 32 percent.

Demand for semiconductor devices has been expanding for a wide range of applications, such as personal computers, mobile telephones, digital home appliances and automobiles. At the same time, the silicon wafer market has grown significantly in recent years. Amid these conditions, the Shin-Etsu Group has been providing a stable supply to users from its silicon wafer production bases in Japan, Malaysia, the United States, the United Kingdom and Taiwan.

To meet growing global demand, rapidly increasing production and dispersing risk in the 300mm wafer market, the Group expanded capacity at its five production bases in Japan and the United States. A production system for 1 million wafers a month was set up in summer 2007, earlier than scheduled. In the future, the Group will apply its collective strength to fulfilling its duties as the world's largest manufacturer by accurately grasping demand trends and maintaining its framework for promptly increasing

capacity to meet demand.

The Group is also focusing endeavor on sales of such special products as SOI wafers, used for applications in highly functional devices. For wafer products with diameter less than 200mm, the Group will concentrate on strengthening competitiveness through increased productivity, product quality improvement efforts and product differentiation.

The Shin-Etsu Group, as a world leader in the semiconductor silicon wafer business, will continue working to achieve the world's highest quality products and provide products that meet the needs of the world's most advanced technologies, such as larger-diameter, super-smooth silicon wafers with the lowest defect rate, and meet all client demands including delivery dates.

### Rare Earth Magnets for the Electronics Industry

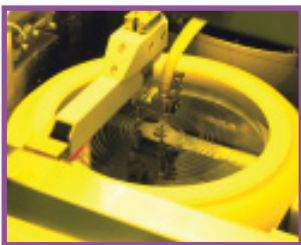


Rare earth magnets are high-performance, permanent magnets that have about 10 times the magnetic force of ferrite magnets. The Shin-Etsu Group has the largest global market share for rare earth magnets for voice coil motors (VCM), which are used for hard disk drives (HDD) used in computers, servers and video recording devices. Shin-Etsu has been working to progressively increase production capacity to meet the strong demand for VCM applications.

The Shin-Etsu Group is the only manufacturer in the world to carry out integrated production of high-quality rare earth magnets starting from high-purity rare earth. Starting by developing materials with the characteristics that customers demand, the Shin-Etsu

Group then uses its ability to quickly adapt in moving from prototype to commercial production to respond to customer needs, providing a stable supply of products, developing products that meet application requirements and maintaining thorough quality control. Shin-Etsu's magnet business will continue contributing to the development of more compact, lightweight, high-performance and energy-efficient electric and magnetic parts.

### Photoresists and Other Products



The Shin-Etsu Group is developing a system to supply the principal materials needed in the lithography process for manufacturing semiconductor devices. We have used our close connections with the semiconductor industry to

develop, commercially produce and market photoresists for KrF (krypton fluoride) excimer lasers as a photo-sensitive material used in imprinting semiconductor circuits, I-line resists for thin-film magnetic heads and wafer-level chip-size packaging (WLCSP), and the dust protective covers called pellicles, used for photomasks with excimer laser lithography.

Although Shin-Etsu entered the photoresist market last, it is now the top photoresist manufacturer in the world, with around one-third of the market share due to the Company's meticulous response to customers' technological innovations and widespread client trust gained by establishing thorough quality control and production commercialization technologies. Currently, ArF (argon fluoride) resists are demonstrating substantial growth with the progress of full-scale adoption for advanced devices.

The Group is preparing for the next generation of semiconductor devices in such ways as developing advanced photomask blanks together with users. The Group will continue strengthening its development and marketing to establish its position as a top semiconductor materials manufacturer.

### Epoxy Molding Compounds



Epoxy molding compounds are used as packaging materials in almost all semiconductor products, from specific-application semiconductors to CPUs. Demand for thinner and smaller devices in the semiconductor market is driving the develop-

ment of chip-size packages and the system-in-package trend in which multiple large-scale integrated (LSI) chips are stacked and installed in a single package. Amid these trends, the Shin-Etsu Group is working aggressively to meet diversified needs for semiconductor packaging.

Employing cutting-edge technology accumulated through the development of various silicone products, the Shin-Etsu Group has provided a succession of unique products that are differentiated from those of other companies. These include Green EMC products, which introduced a new flame-retardant system that responds to recent environmental requirements, liquid epoxy resins that can be applied for WLCSP packaging, and molding materials modified with silicones for high-luminosity LEDs, for which applications have rapidly broadened in recent years.

#### Topics

### 300mm Wafer Production Capacity Increased to 1 Million per Month



In 2001, Shin-Etsu Handotai Co., Ltd. was the first company in the world to mass produce 300mm wafers. Shin-Etsu Handotai has continued to invest aggressively in this business since then, and expanded production capacity to 1 million wafers per month in summer 2007, ahead of schedule. After considering all the risks, Shin-Etsu Handotai's current plan calls for investing in capacity expansions at its primary Shirakawa Plant, Shin-Etsu Handotai America, Inc., and Group company Mimasu Semiconductor Industry Co., Ltd., in addition to a new investment at Nagano Electronics Industrial Co., Ltd. These investments will promote multiple production bases and help to ensure a stable supply. In addition, we have increased single-crystal ingot production capacity at the Shirakawa Plant and Shin-Etsu Handotai America, and initiated production at Shin-Etsu Handotai's Takefu Plant in Fukui Prefecture, Japan. The Shin-Etsu Group will carefully follow market trends and immediately increase production capacity when it confirms demand.

# Functional Materials and Others



Preforms for optical fiber

## Synthetic Quartz Products

With silicon metal refined to a high degree of purification as a raw material, the Shin-Etsu Group established a manufacturing technology for super-high-purity synthetic quartz that holds impurities to the level of 1 ppb (one part per billion). The Group is the first in the world to mass produce high-purity synthetic quartz, which is extremely high in purity compared to natural quartz.

The Group supplies synthetic quartz products such as preforms for optical fiber, LSI photomask substrates, stepper lenses used in photolithography for creating semiconductor circuits, and large-size photomask substrates for LCDs, which are indispensable materials for the IT industry.

The Shin-Etsu Group is committed to differentiation through quality and will work to ensure a proper response to changes in demand for preforms for optical fiber and large-size photomask substrates for LCD panels to prepare for the further development of the high-level information society.

## Rare Earths and Rare Earth Magnets for General Industrial Use

The Shin-Etsu Group uses high-level separation and refining technologies and physical property control technologies to commercially produce rare earths with a purity rate of 99.9999 percent. The Group's rare earths contribute to energy conservation and reduction of CO<sub>2</sub> emissions through widespread application in such products as plasma display panels, LCD TVs and fluorescent lamps, luminescence for medical equipment, oxygen sensors in automobile engines, and capacitors.

By maximizing strong magnetic force, the Group's rare earth magnets for general industrial use contribute to the introduction of products that are lighter in weight, smaller in size, and higher in output for equipment such as motors. Among a wide range of applications, rare earth magnet uses are increasing in product areas such as home appliances, including energy-efficient air conditioners, and various motors for automobiles. In addition, rare earth magnets have begun to be used in such energy-saving and environmentally friendly applications as motors for hybrid cars and wind-power generators.

The Shin-Etsu Group has developed high-performance technology for producing rare earth magnets, named the "new alloying process by grain boundary diffusion." As a result of the development of this new high-performance technology, the Group has realized the world's highest magnet performance characteristics for applications at higher tempera-

## Net Sales of Main Products

(Billions of yen)

	2008	2007	2006
Synthetic quartz products	29.6	32.9	34.5
Rare earths and rare earth magnets, etc.	37.4	34.8	30.6
Others	43.7	49.2	64.9
Total	110.7	116.9	130.0

tures. Expected applications include motors for automobiles, air conditioners and other equipment that requires high heat-resistance.

## Liquid Fluoroelastomer SHIN-ETSU SIFEL®

SHIN-ETSU SIFEL® is a liquid fluoroelastomer that Shin-Etsu was the first in the world to develop. Its form before hardening is either a liquid or a paste, and after heat curing, it becomes a flexible synthetic rubber material. SHINETSU SIFEL® has superior resistance to cold, keeping its elasticity even at minus 50°C. In addition, it has such desirable characteristics as resistance to oils, solvents, chemicals and heat as well as excellent electrical insulation properties. Accordingly, it is used as a molding material, an adhesive, a coating and a potting material in a wide range of application fields such as the automotive, aircraft, electric, electronics, office equipment and petrochemical industries. It is contributing to the improvement of product reliability in many application areas.

## Other Products

Shin-Etsu's flexible copper-clad laminates (FCLs) are used as materials for printed circuit boards in such electronic products as mobile phones and digital cameras and are contributing to making these products lighter and more compact. Shin-Etsu developed and started marketing original two-layer flexible FCLs and a halogen-free cover layer with excellent properties.

Shin-Etsu Engineering Co., Ltd., a Shin-Etsu Group company, consists of the Plant Division, which handles the integrated design and construction of various types of plants, and the Electro-Mechanics Division, which handles the development, planning and manufacturing of equipment for electronics-related industries. Both divisions also contribute to expediting the Shin-Etsu Group's capital investment projects and receive a large number of orders from companies outside of the Group. The Electro-Mechanics Division also supplies alignment machines for panel production of LCDs and Plasma Display Panels (PDPs).

### Topics

### New Rare Earth Separation and Refining Plant Completed



Shin-Etsu decided to construct a rare earth separation and refining plant in Sakai City, Fukushima Prefecture, to increase the yield for rare earth magnet materials. The new plant will meet recent burgeoning demand for rare earth magnets in motors for products including hybrid cars and air conditioner compressors, and will play a major role in the stable supply of materials for the expanding rare earth magnets business.