

Advancing Our Global Operations

Since establishing its first overseas subsidiary in 1960, the Shin-Etsu Group has added manufacturing and sales bases worldwide in the most appropriate locations in each business segment. Backed by a production network directly linked to markets around the world, we have become one of the world's largest suppliers for a number of our major products. To reinforce these market positions, we conduct extensive sales activities around the world and constantly enhance our technologies and the quality of our products while developing new products. We are also strengthening our operating bases. We make substantial investments in market sectors where demand is expected to grow, and manufacture our major products such as PVC, silicone and semiconductor silicon at more than one location to upgrade our ability to maintain a stable supply.

Products with Top Market Shares

The Shin-Etsu Group supports its customers and responds to their needs through numerous activities. We have established manufacturing bases for a stable supply of high-quality products. We also develop superior manufacturing processes and quickly develop products for specific applications and purposes. Due to these activities, our PVC and semiconductor silicon rank among the world's top shares.

PVC plays a central role in our communities and lives in the form of a diverse range of products extending from infrastructure components to household products. More growth in demand is anticipated, mainly in emerging countries with rapidly expanding economies. To meet the increasing global demand for PVC, we will continue to strengthen our

integrated manufacturing infrastructure that begins with raw materials at Shintech Inc., our group company.

Semiconductor silicon is the base for semiconductor devices that are vital to the operation of PCs, smartphones, digital home electronics, automotive electronic components and many other electronic devices. To meet the ever-increasing need for higher-level technological requirements associated with miniaturization and higher performance, the Shin-Etsu Group uses its advanced R&D capabilities and manufacturing technology to continuously develop higher-quality wafers and maintain stable supplies to our customers.



Shintech: Making the World's No. 1 PVC Business Even Stronger



Plaquemine plant

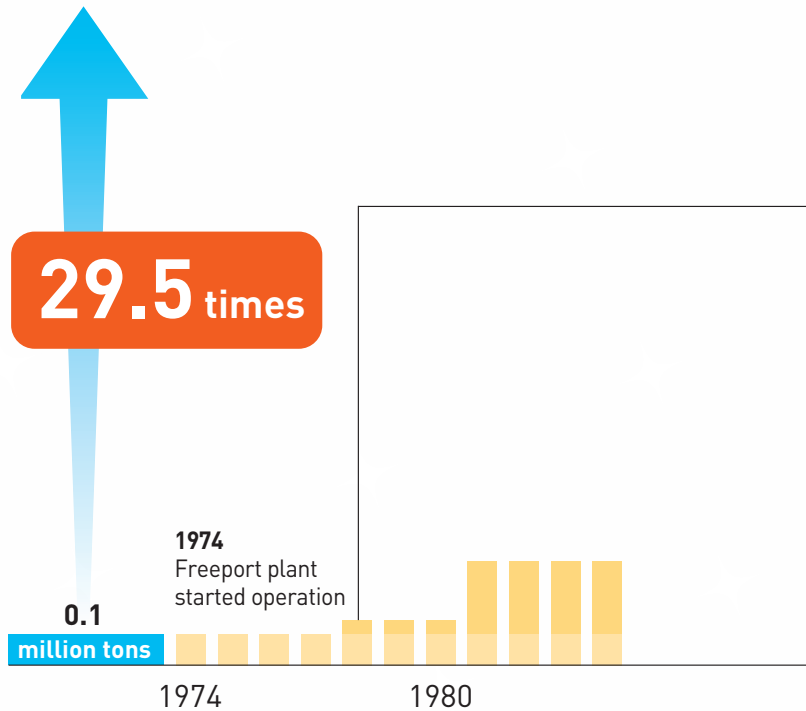
Shintech, a subsidiary of the Shin-Etsu Group in the U.S., is the world's largest manufacturer of PVC. By performing aggressive sales activities in the U.S. and worldwide, Shintech has achieved consistent growth while minimizing the effects of the changes in the U.S. economy. Over the years, Shintech has added production capacity in a timely manner while assessing trends changes in PVC demand. Currently, Shintech has an annual PVC production capacity of 2.63 million tons.

To continue to meet the growing global demand for PVC, Shintech makes investments to strengthen its ability to produce raw materials. Salt is one key raw material for PVC. In 2011, Shintech completed construction of the Plaquemine plant in Louisiana, an integrated facility that performs almost every step of the PVC production process: rock salt mining, refining to extract salt, salt electrolysis to produce chlorine, production of vinyl chloride monomer (VCM), and production of PVC resin.

Construction for the purpose of increasing the production capacity at this facility is now underway, with completion scheduled for 2015. Annual production capacity will increase by about 300,000

Shintech's Total PVC Production Capacity

2.95 million tons
(Planned for 2015)

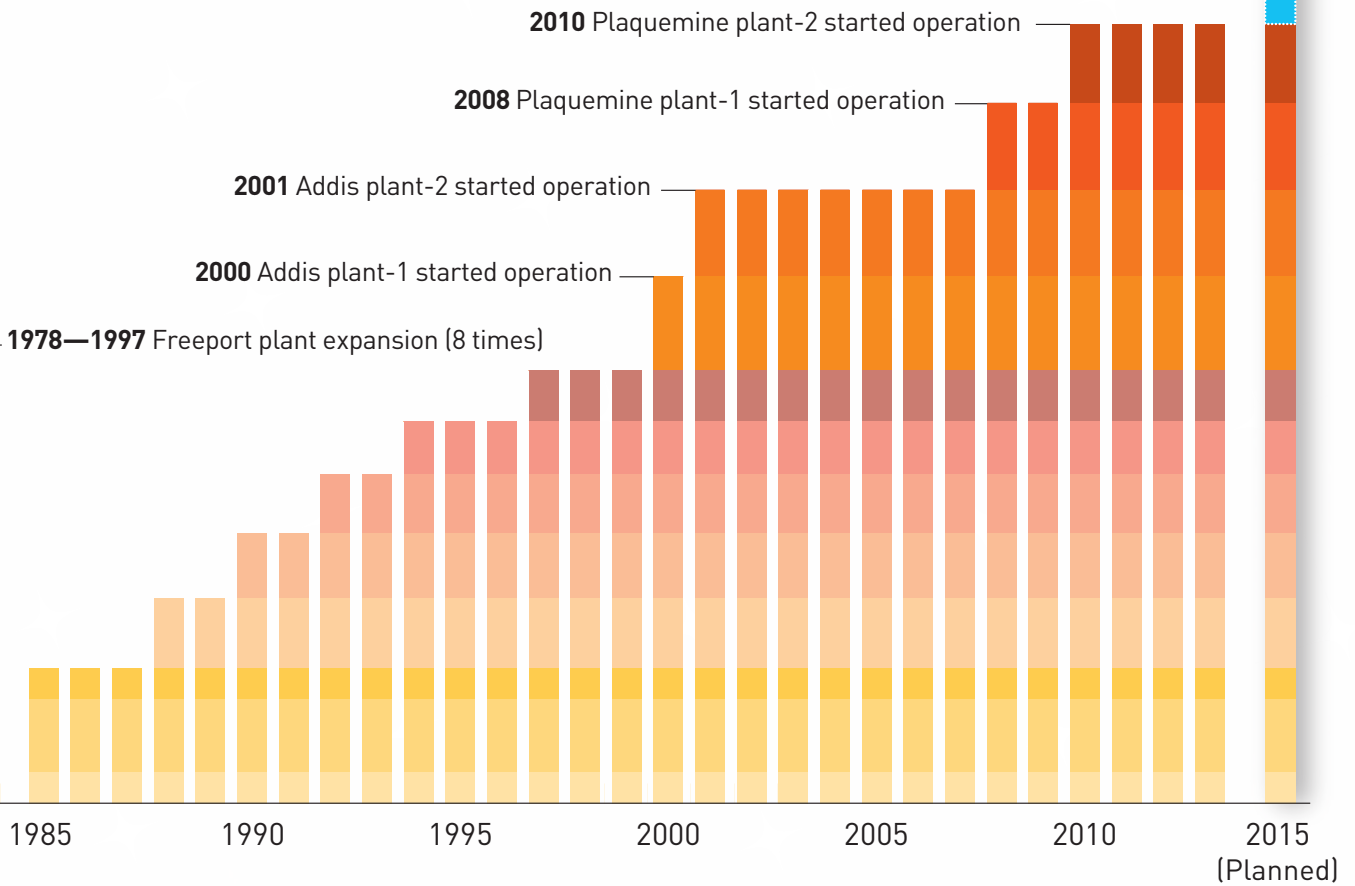


tons for VCM, 200,000 tons for caustic soda and 300,000 tons for PVC. Overall, Shintech's annual production capacity of PVC will climb to 2.95 million tons, which is approximately 30 times higher than it was when Shintech started manufacturing PVC 40 years ago.

Shintech is giving consideration to the internal production of ethylene, one of the primary raw materials for PVC, to further strengthen its PVC production system. One step in this direction was the 2014 application to the Louisiana Department of Environmental Quality for a permit to construct an ethylene plant. Simultaneously with this application



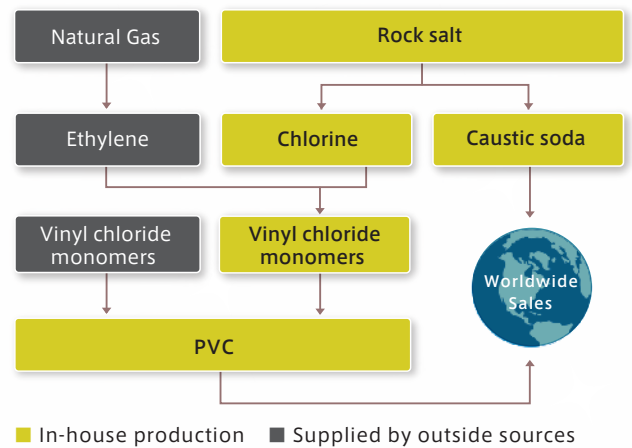
2015 Addis plant expansion (Planned)



Rock salt mine

process, Shintech is studying the amount to be invested, the time of construction for the plant and other items involving this project.

Shintech's Integrated Production Facilities



Diversified Production Bases

Maintaining a consistent supply of high-quality products for customers is one of the highest priorities of the Shin-Etsu Group. We manufacture our major products at more than one location, so that even if a natural disaster or other event disrupts operations at a facility, we can continue to supply a product from one or more other facilities. For PVC resin, which is one of our major products, we have plants in the U.S. and Europe, Japan. For semiconductor silicon and silicones as well, we have production facilities conveniently located in the areas where there is demand for these materials worldwide. We also plan to establish multiple production bases for other products and strengthen our supply system for customers globally.

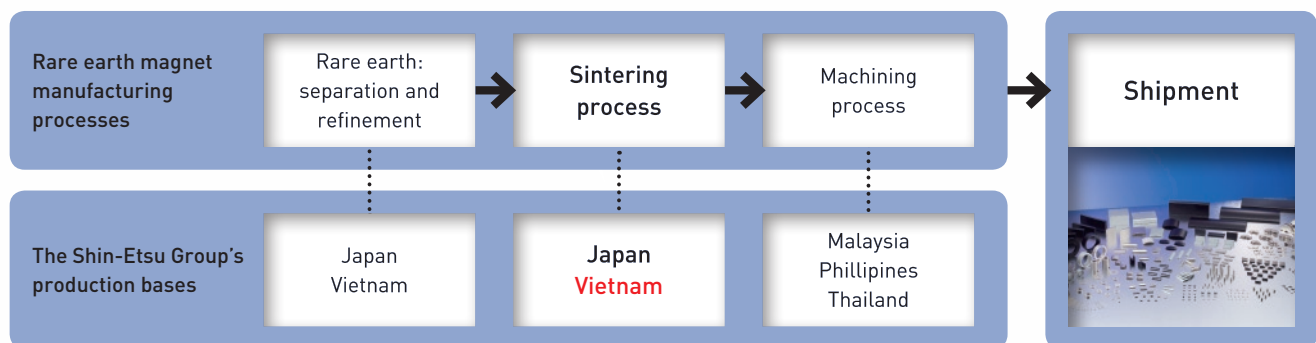
New Rare Earth Magnet Plant in Vietnam

The Shin-Etsu Group is building a new rare earth magnet manufacturing plant in Vietnam. The new facility will include processes that are currently performed only at the plant in Japan. Establishing two locations for these processes will strengthen our rare earth magnet supply system for the customers. Additionally, we will proactively work to be certain to capture the expected large expansion in demand for these magnets, mainly for automobile applications.



Shin-Etsu Magnetic Materials Vietnam Co., Ltd.

The Shin-Etsu Group's rare earth magnet manufacturing processes and its multiple production bases



Technology



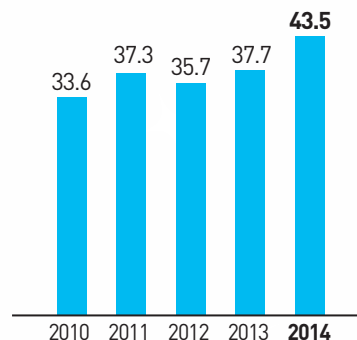
Research & Development

The Shin-Etsu Group's R&D focuses on creating unique technologies that differentiate us from competitors. In addition, to improve the quality and productivity of current products, we also develop technologies to commercialize new research themes in order to create major products of the future. We select new businesses development based on market size, growth potential, profitability, and the relationship to our existing technologies and expertise. Once selected, we check progress toward commercialization. In addition, we are working on new business models in domains that span several of our research facilities. Also, we focus on performing new types of research that maximize our collective strengths as we bolster collaboration among the Group's research facilities. We aim to launch products that take full advantage of the distinctive strengths of the Shin-Etsu Group.

Intellectual Property

Patents, technologies and other intellectual property are valuable assets of the Shin-Etsu Group. As of March 31, 2014, the group had 6,515 patents in Japan and 8,452 overseas patents, including 205 patents newly registered in the U.S. in 2013. We are in the top class among Japanese chemical companies for patents in the U.S.

R&D Costs (Billions of yen)



Number of Patents by Region

● Number of patents acquired during the year ended March 31, 2014

Japan	933
North America	205
Asia/Oceania	550
Europe	348
Other Areas	2
Total	2,038

● Cumulative number of patents acquired as of the end of FY 2014

Japan	6,515
North America	2,533
Asia/Oceania	3,064
Europe	2,794
Other Areas	61
Total	14,967

Priority Sectors for Growth

For the development of new products, the Shin-Etsu Group targets new business domains like energy and health care as well as priority sectors like semiconductor-related materials where the Group already has many strengths. Energy is one of the five priority domains for new business. In this field, we are developing a silicon-based material for high-capacity lithium-ion batteries. Demand for these batteries is climbing along with the popularity of smartphones and tablet PCs. We aim for developing new products for this growing market. In health care, we have invested in NanoCarrier Co., Ltd., a Japanese pharmaceutical venture company, and are involved in joint research for materials that efficiently deliver drugs to the targeted area of the body.



Technology

Products for the Semiconductor Industry

In the semiconductor manufacturing sector, the Shin-Etsu Group supports the progress of the industry as a global supplier of a broad range of materials. Our product lineup extends from the raw material silicon metal to chief material silicon wafers, process materials for electrical circuit printing, and materials for IC chip assembly. Through customer's evaluation of these products, the Shin-Etsu Group's technologies make a great contribution to further progress in the performance of semiconductors.

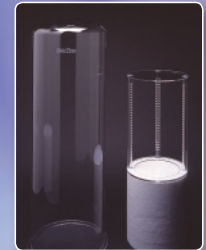


Epoxy Molding Compounds

The Shin-Etsu's epoxy molding compounds provide excellent reliability and moldability due to the utilization of the Shin-Etsu's own silicone low-stress technology, special filler technology and unique flame retardation technology, or "green compound technique."

Quartz Glass for Semiconductor Production Processes

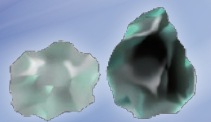
Wafers are fixed in a boat (right) and placed in a furnace tube made of quartz glass (left) for oxidation, diffusion and CVO processes. The quartz glass products of Shin-Etsu Quartz Products Co., Ltd., meet customers' needs for high-temperature processes.



Raw Material

Silica and Silicon Metal

Simcoa Operations Pty. Ltd. of Australia has long-standing silica mining rights and produces silicon metal, a main raw material for semiconductor silicon, silicone and synthetic quartz. It provides key support to the Shin-Etsu Group by ensuring a stable, long-term supply of high-quality silicon metal.



Silica and silicon metal



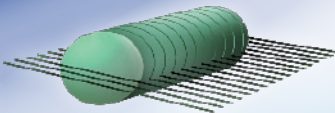
Polycrystal

Silicon Carbide Products

The silicon carbide products of Shinano Electric Refining Co., Ltd., greatly contribute to improving precise processing of silicon wafers through their use as sawing materials and abrasives.



Single crystal growth



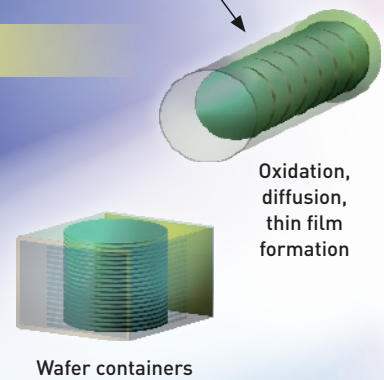
Cutting and polishing



Silicon wafer, epitaxial wafer

Silicon Wafers

The Shin-Etsu was first to globally mass produce 300mm silicon wafers in 2001. Shin-Etsu Handotai Co., Ltd., established defect-free technology for single crystals and high-flatness processing technology for silicon wafers, gaining strong customer trust for its quality technologies and commercial production capabilities.

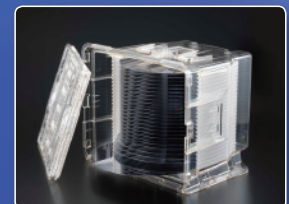


Oxidation, diffusion, thin film formation

Wafer containers

Wafer Containers

Group company Shin-Etsu Polymer Co., Ltd., has an excellent track record in front opening shipping boxes (FOSB) and front opening unified pods (FOUP).



Device Production

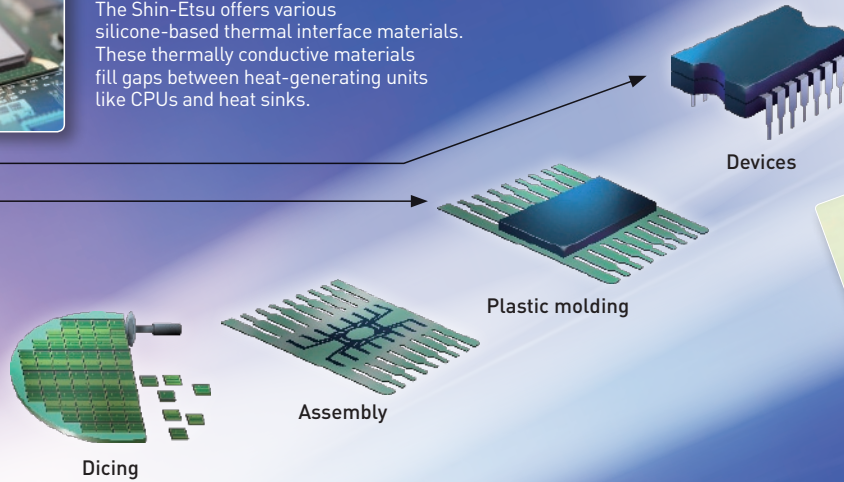


Silicone-based Thermal Interface Materials

The Shin-Etsu offers various silicone-based thermal interface materials. These thermally conductive materials fill gaps between heat-generating units like CPUs and heat sinks.



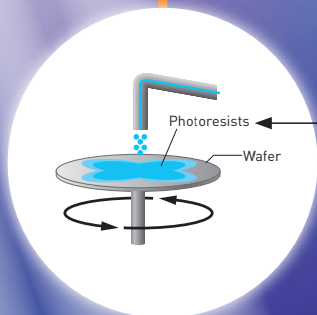
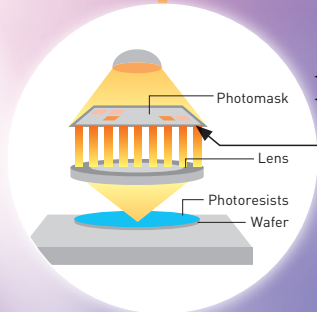
Application



Pattern Formation



Pattern formation



Photomask Blanks

Photomask blanks are photomask materials used for etching circuit patterns on silicon wafers. In fiscal 2009, the Shin-Etsu began commercial production of cutting-edge photomask blanks, which are indispensable to the refining of semiconductors.



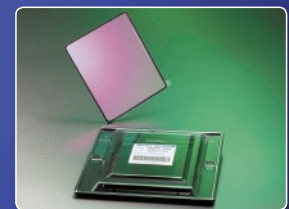
Synthetic Quartz Photomask Substrates for LSIs

Used to transfer circuit patterns to semiconductor wafers, these photomask substrates have earned a reputation among customers for outstanding quality and consistency of supply. In recent years, these substrates are also being used as raw materials for photomask blanks.



Pellicles

The Shin-Etsu supplies high-quality pellicles for ArF and KrF excimer laser lithography. These products have high light-resistance and good transmission uniformity. In addition, the Shin-Etsu has succeeded in the development of super large-size pellicles for the production of liquid crystal display (LCD) panels.



Photoresists

The Shin-Etsu developed the first photoresist for use with the short wavelength excimer laser in 1996, and has become the leading manufacturer in this field. Sales have also begun for trilayer materials used in post-45nm generation refined processes.

