

In the Spotlight

Shintech: The World's Largest PVC Manufacturer

Driving Group Earnings

Shintech in the U.S. is the world's largest PVC manufacturer, and plays a major part in the Shin-Etsu Group's PVC business.

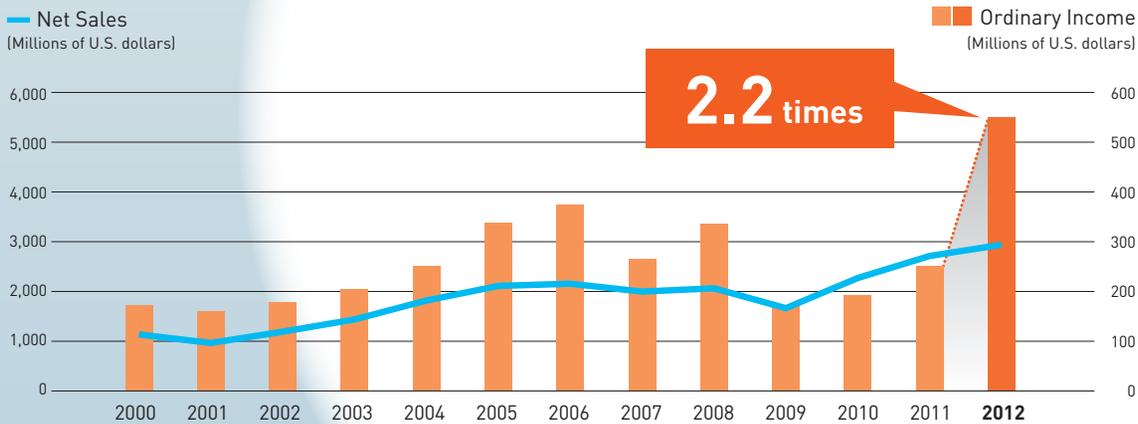
In fiscal 2013, Shintech achieved record net sales of \$2,941 million, up 8.3% and record ordinary income of \$551 million, up 2.2 times from the previous year. It maintained a high level of shipments by expanding sales to its customers worldwide, not only in the U.S. but also in emerging countries such as Central and South America. As a result, the company achieved significant growth in sales and earnings.

An integrated PVC production facility was constructed in the state of Louisiana at a total investment of \$2.5 billion in order to ensure a stable supply of raw materials. Since its completion in fiscal 2012, this facility has been maintaining a high operating rate and contributed to the large increases in sales and earnings at Shintech.



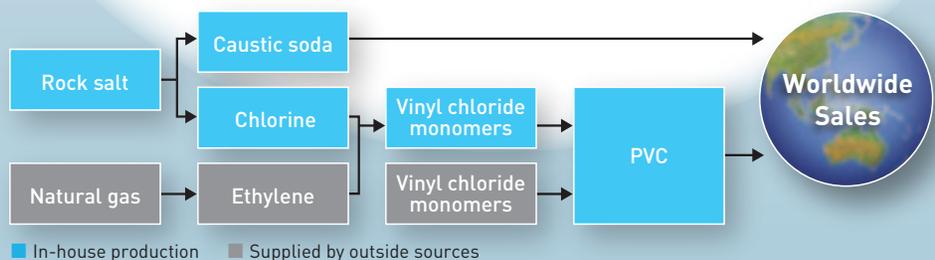
Plaquemine Plant

Shintech's Operating Performance



Rock salt mine (1,800 meters underground)

Shintech's Integrated Production Facilities

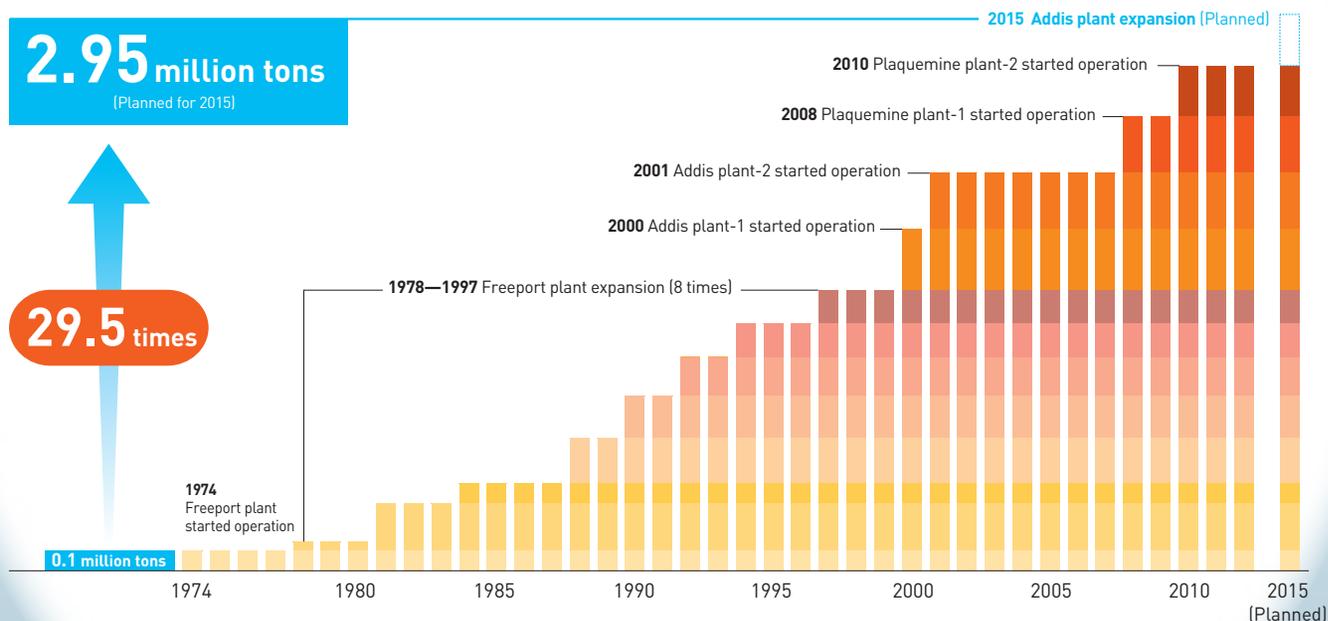


Preparing for the Future

In June 2013, Shintech decided to further increase its production capacity of PVC at its bases in Louisiana. The planned production capacity increase will be about 300,000 tons per year of PVC. With this expansion, Shintech's total PVC production capacity will become 2.95 million tons per year—combined with Shintech's existing manufacturing facilities in Louisiana and Texas. Completion of this expansion is targeted for 2015, and the amount of investment is expected to be \$500 million.

Since starting operations in 1974, Shintech has been consistently operating at a high level of utilization and selling its entire output while increasing its production capacity by carefully watching changes in PVC demand. Shintech expanded its Freeport plant eight times and newly constructed its Addis and Plaquemine plants. Its current annual PVC production capacity is 2.64 million tons. As the world's largest producer of PVC, Shintech will use its fully integrated production operations to capture global growth in demand.

Shintech's Total PVC Production Capacity



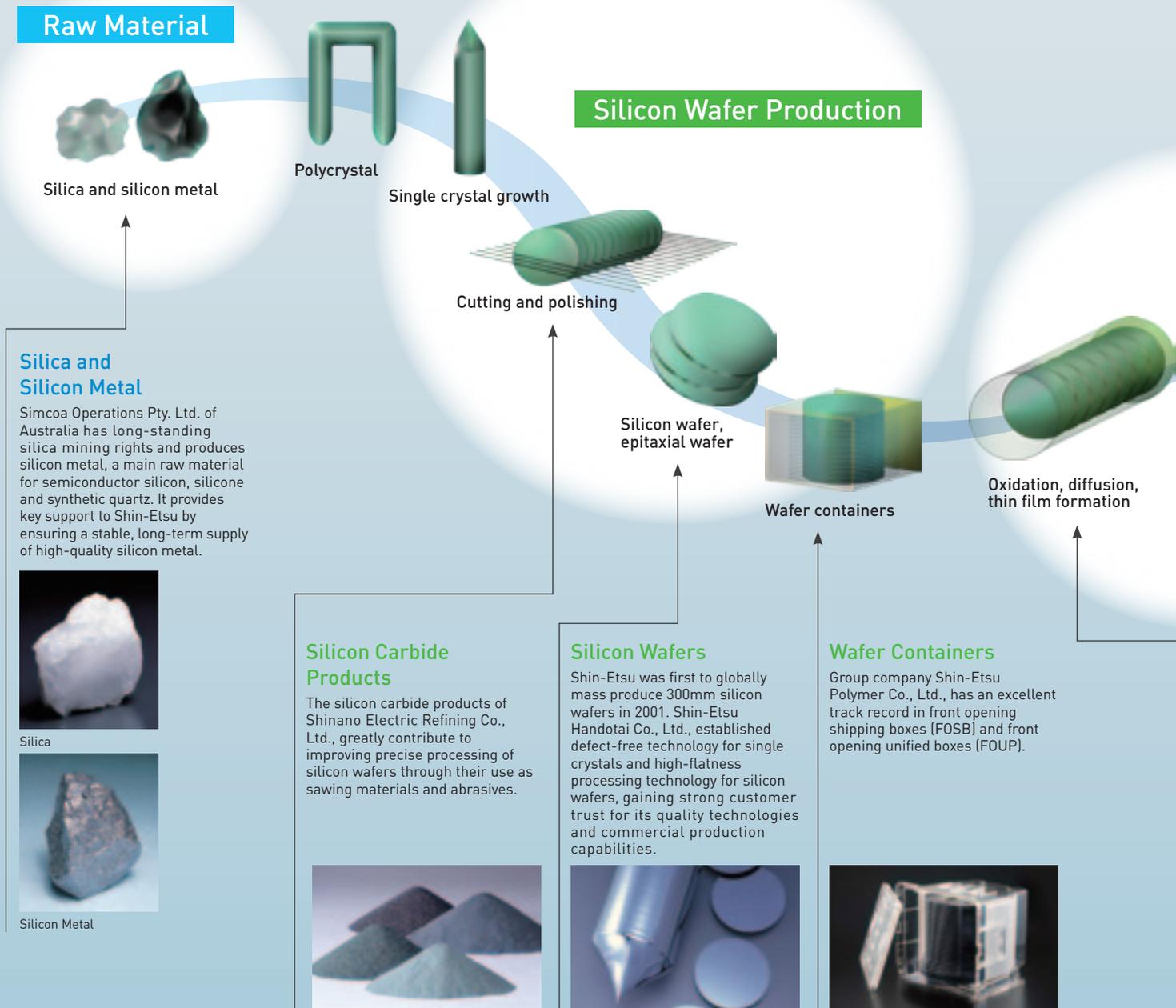
More Growth Expected for PVC Demand

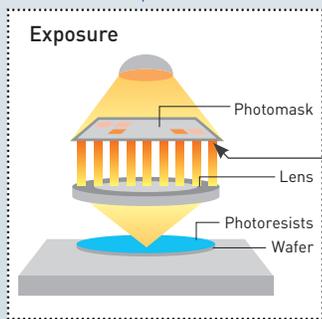
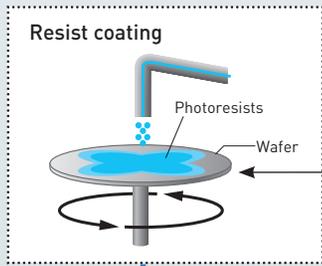
PVC is used primarily in products related to housing such as water and sewage pipes, exterior siding materials and window frames, and products used for infrastructure. Demand is increasing worldwide, particularly in emerging countries. Global demand for PVC has increased at an annual rate of about 3% over the past decade, and was estimated to be approximately 37 million tons in 2012. Shintech's planned 2015 increase in production capacity will allow the company to continue capturing the rising global demand for PVC.



Technologies for the Semiconductor Industry

The Shin-Etsu Group provides a variety of products which are essential to a broad range of manufacturing process for semiconductor devices. With our solid customer relationships, we quickly acquire information about changes in semiconductor industry demand, and that information enables us to make the appropriate investments at the right time.





Photoresists

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.



Photomask Blanks

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



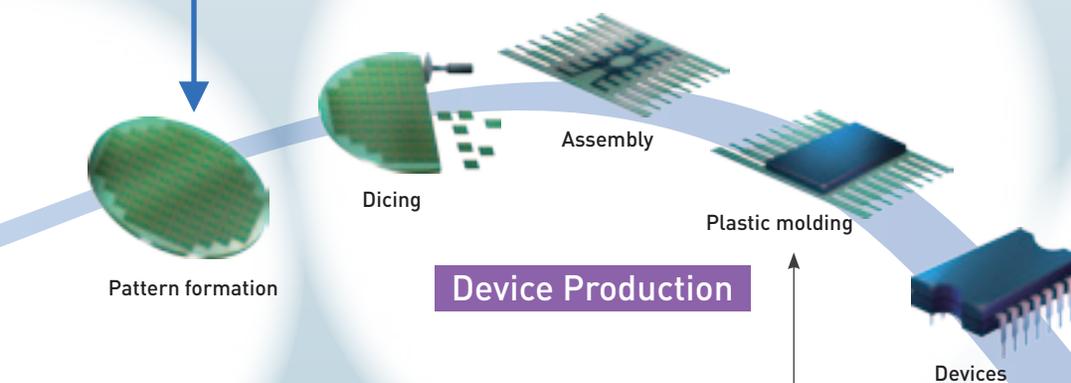
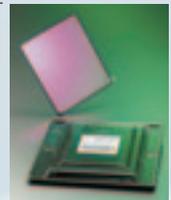
Synthetic Quartz Photomask Substrates for LSIs

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

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, Shin-Etsu has succeeded in the development of super large-size pellicles for the production of liquid crystal display (LCD) panels.



Pattern Formation

Device Production



Application

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 CVD processes. The quartz glass products of Shin-Etsu Quartz Products Co., Ltd., meet customers' needs for high-temperature processes.



Epoxy Molding Compounds

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



Silicone-based Thermal Interface Materials

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

