



Chemicals represent the future of human society, for advanced chemical technology is moving the world. LG Chem aims to be a major player in the chemical industry and is bolstering global operations in China, India, Europe, and North America. The company is committed to improving the future prospects for all people by following a globalization strategy that encompasses technology, production, marketing, R&D, local hiring and culture.





*progressive*

*globalization* >

"Solid globalization" has been designated one of the main tasks for LG Chem in 2004. Most of the company's future growth must occur outside Korea, so globalization of operations is a must. Therefore, the company is securing operational bases and developing new customers ahead of the rivals in every market where it enjoys a competitive edge.

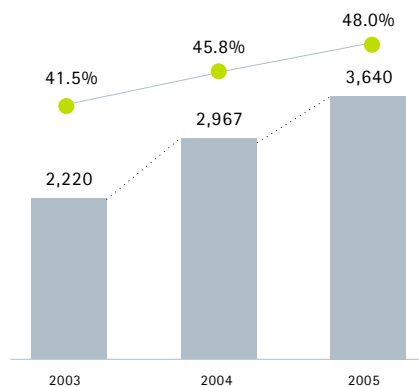
LG Chem is focused immediately on developing six product lines into "No. 1" businesses — batteries, polarizers, PVC, ABS, artificial marble and surface materials. At the same time, the global network is being expanded with the establishment of new production subsidiaries, research centers and branch offices around the world. Production capacity has been expanded steadily in China, which has tremendous growth potential.

At the end of 2003, the company's overseas network consisted of 10 manufacturing subsidiaries, 5 marketing subsidiaries, 1 research facility and 8 branches in China, India, Vietnam, North America, and Europe. Overseas sales, which include export and overseas subsidiary performance, exceeded ₩2.5 trillion in 2003.

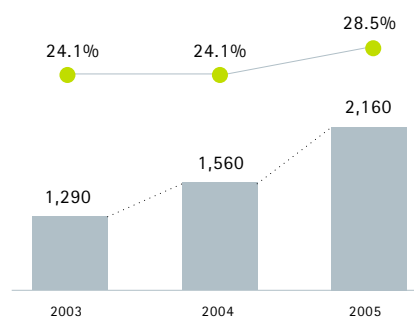
## >> BUSINESS PROSPECTS

\* Includes exports from Korea and items produced overseas.

— INTERNATIONAL SALES (unit: USD million)



— SALES IN CHINA (unit: USD million)



# CHINA



Jong-Pal Kim  
President  
LG Chem China

## CHINA STRATEGY

China's growth potential has the world's attention and is the focal point of LG Chem's globalization strategy. LG realized back in the early 1990s that the China synthetic resin market could grow tremendously, and studies were carried out on the feasibility of entering this market via direct investment.

The company focused on three points for success in China:

First, the proper products had to be selected after careful analysis of the business environment, to include customers, LG Chem's capabilities and those of competing companies.

Next, the right joint venture partners had to be found and long-term trust built up.

Finally, locations had to be selected to reducing logistics costs while approaching cities with large numbers of consumers.

Once these considerations were taken into account, LG Chem established local production subsidiaries and steadily expanded its presence in China, while localization efforts have been ongoing. China is where LG Chem must prevail and will be the hub of overseas operations for the company.

### **Chemicals & Polymers: PVC, ABS**

PVC production subsidiary LG Dagu was established in Tianjin in 1995, and the following year an ABS joint venture plant was set up in Ningbo, Zhejiang Province. Investments such as these in petrochemical operations have enabled LG Chem to make major inroads into China. The company had exported PVC and ABS to major world markets from the late 1980s, building up a strong brand image. This recognition has resulted in the company's having to steadily increase local production in China. LG Chem has never been able to meet the demand for its PVC and ABS fully, even after charging a 10-20% premium over competing products.

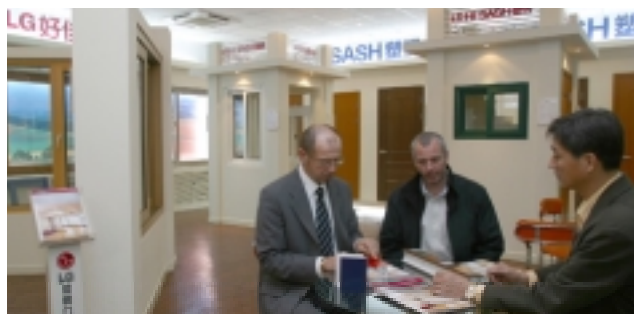
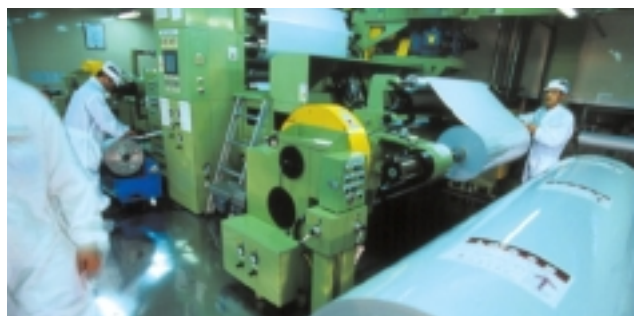
Currently, at least 50% of all the PVC and ABS sold by LG Chem outside Korea is purchased in China, and the sales volume continues to increase. Noteworthy results have already been achieved for PVC and ABS, and the company is expanding production capacity and the number of "world-class" product offerings is growing rapidly.

Expansion of output at Chinese subsidiaries is being steadily increased to secure competitiveness for major products. Annual PVC capacity stood at 340,000 tons at the end of 2003 and will be increased to 550,000 tons in 2006 and then 1.1 million tons by 2008. ABS production in China, which totaled 300,000 tons a year as of December 31, 2003, will be half a million tons in 2005.

### **Industrial Materials: Construction Materials**

The Tianjin subsidiary produces PVC flooring and tile for use in Chinese construction. Sales in 2003 reached US\$24.1 million, and operating income was over US\$3.9 million, but annual sales is expected to rise to US\$100 million by 2005. Production capacity at the PVC processing plant at Tianjin is being expanded in stages, and plans call for the construction of a second plant in the Huadong area.

LG Chem also opened a unique display room for industrial materials in Shanghai in September 2003. This facility will facilitate the company's advance into the Chinese construction, remodeling, and interior decoration markets. The company expects annual sales in China by the Industrial Materials Business Unit to rise from the current ₩80 billion to ₩250 billion in 2005 and on to ₩700 billion by 2008.





#### **Information & Electronic Materials: Polarizers, Rechargeable Batteries**

Information and electronic materials will be the main growth engine backbone of LG Chem's China operations in the future. After years of preparation, this operation took its first steps overseas in 2003. China is fast emerging as an IT industry hub, prompting LG Chem to accelerate its advance into this market and bolster its competitiveness there.

Construction began on a polarizer plant in Nanjing in 2003, and it will go into full operation in the first half of 2004. The facility will also be used to produce rechargeable batteries. The Chinese market for rechargeable batteries is currently 32 million cells a month, or 29% of world demand, and is estimated to be growing some 38% a year. LG Chem will be capable of producing 4 million cells a month in China by the end of 2004 and will increase monthly output to 12 million cells the following year. Thus, company officials expect this single item to earn ₩127.6 billion in operating income on sales of more than ₩1.28 trillion in China during the coming year. The company will continue to elevate the sales volume and profitability of its battery and polarizer operations to become of the Top Three players in China.

Increasing sales is important, but expanding infrastructure and the organization is, too. Therefore, the China Regional Headquarters was established at the beginning of 2004 to ensure operations are smoothly run. The China HQ will work closely with the Seoul Head Office to formulate and implement strategies, manage risk, offer shared services, and train and manage personnel. Operation of the China HQ will also be an opportunity to gain know-how and experience prior to establishment of a holding company in China in 2006. At that point, localization of Chinese operations will be complete.

By 2008, LG Chem has a target to record ₩15 trillion in annual sales, of which US\$5 billion will be achieved by the China operations. The plan is to grow into one of China's five largest chemical companies in terms of both profitability and scale.

LG Chem will take full advantage of its early presence in China to boost competitiveness and accelerate entry into new business areas, making China a "second home market."

# NON-CHINA



## NON-CHINA STRATEGY

LG Chem will continue to make inroads into China while at the same time pursuing diversification by investing resources and competencies in the American, European, and Indian markets. The company has established the first subsidiary for producing HI-MACS brand artificial marble. The US-based operation is scheduled to start up in 2005. A new research subsidiary will also focus on developing mid-/large-sized batteries with the target to commercialize a large lithium-polymer battery for hybrid electric vehicles (HEVs) by 2005.

Meanwhile, a company-wide study of the Brazilian market is being readied for the second half of 2004. LG Chem has so far been unable to pursue offshore operations in earnest in Europe, but plans are in the works for Eastern Europe. A Russian market survey will first be carried out in the first half before establishing an overall strategy for Europe. Rising international oil prices will benefit the Russian economy and is expected to spark a boom in demand for industrial materials there.

A strategy is also in place for expanding operations in India in 2004. Polystyrene and expandable polystyrene production capacity at LG Polymers India is being increased and additional funds will be invested in ABS and EP compound production.

The overall LG Chem organization is being brought up to global standards. People will be intensively trained in the necessary business skills and foreign languages to be effective in the global marketplace.

### LG CHEM OVERSEAS SUBSIDIARIES

	affiliates	Establishment	Location	Products
manufacturing	Tianjin LG-Dagu Chemical Co., Ltd.	Dec. '95	Tianjin, China	PVC
	Ningbo LG-Yongxing Chemical Co., Ltd.	Mar. '97	Ningbo, China	ABS
	LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	Jul. '02	Guangzhou, China	EP compound
	Tianjin LG New Building Materials Co., Ltd.	Dec. '96	Tianjin, China	PVC tile, high-gloss sheet
	Tianjin LG Window & Door Co., Ltd.	May '02	Tianjin, China	Window frames
	LG Chemical (Hunan) Phosphor Materials Co., Ltd.	Feb. '03	Changsha, China	Phosphors (reprocessing)
	LG Chem (Nanjing) Information & Electronic Materials Co., Ltd.	Jul. '03	Nanjing, China	Polarizers / batteries
	LG Polymers India Pvt. Ltd.	Dec. '96	Visakhapatnam, India	PS (HI, GP), EPS
	LG VINA Chemical Joint Venture Co., Ltd.	Jun. '95	Ho Chi Minh, Vietnam	DOP
	LG Chem Industrial Materials	Oct. '03	Georgia country, GA, USA	Hi-Macs (Artificial marble)
marketing	LG Chem Trading Co., Ltd. (LGT)	Sept. '02	Shanghai, China	Industrial, information & electronic materials
	LG Chem America Inc.	May '85	Englewood Cliffs, NJ, USA	Chemicals & Polymers, industrial materials, information & electronic materials
	LG Chem Hong Kong Ltd.	Nov. '96	Hong Kong, China	Chemicals & Polymers
	LG Chem. Europe Sarl	May '02	Geneva, Switzerland	Hi-Macs (Artificial marble)
	LG solid Sources LLC	Nov. '02	Phoenix, AZ, USA	Hi-Macs (Artificial marble)

**WORLD-LEADING PRODUCT:  
POWERFUL HIGH-ENERGY DENSITY LITHIUM-ION BATTERIES**

LG Chem is cultivating information & electronic materials as a major next-generation business line. Rechargeable batteries are included in this category, and the company's global vision is to be one of the world's Top Three rechargeable battery makers by 2005. This is truly an ambitious goal considering the company has only been in this business for seven years, but LG Chem has the technology to make this happen.

The Information & Electronic Materials Business Unit applied base chemical know-how to product Korea's first cylindrical lithium-ion batteries (1,800mAh) in 1999. Within two years, LG Chem had caught up with the competition by coming out with 2,000 and 2,200mAh. The company completed a 2,400mAh cylindrical lithium-ion battery in 2002 and started up the world's first mass-production of this powerful high-energy density battery in April 2003.

A third production facility for cylindrical batteries is being built at the Ochang Techno Park to expand monthly output to 9 million cells. Total production will then be doubled to 18 million cells a month by 2005, giving LG a 15% share of the world market and ranking it among the world's Top Three.

LG Chem's ambitions do not stop with rechargeable batteries. The capacity of cylindrical rechargeable batteries is limited, but LG now wants to take the global lead in next-generation products such as mid-/large-sized lithium-ion polymer batteries. Large-sized rechargeable batteries represent an untapped market with limitless growth potential as electric vehicles (EVs) and hybrid electric vehicles (HEVs) become increasingly popular.

LG Chem opened CPI, a battery research center, in Colorado, USA in March 2002. The development of next-generation lithium-ion polymer automotive batteries is almost complete, and the first mass-production facility for this product line was finished at the end of 2003. The electric vehicle with lithium-ion polymer batteries made by LG Chem won an EV race in record time at the Grand Canyon (USA) in 2002. Importantly, lithium-ion polymer batteries take up only one-third the space their nickel-hydrogen counterparts require. Battery bulkiness has been the biggest obstacle in EV commercialization, and lithium-ion polymer batteries have effectively solved that problem. LG Chem is on track to lead this important product segment.



**WORLD-LEADING PRODUCT**