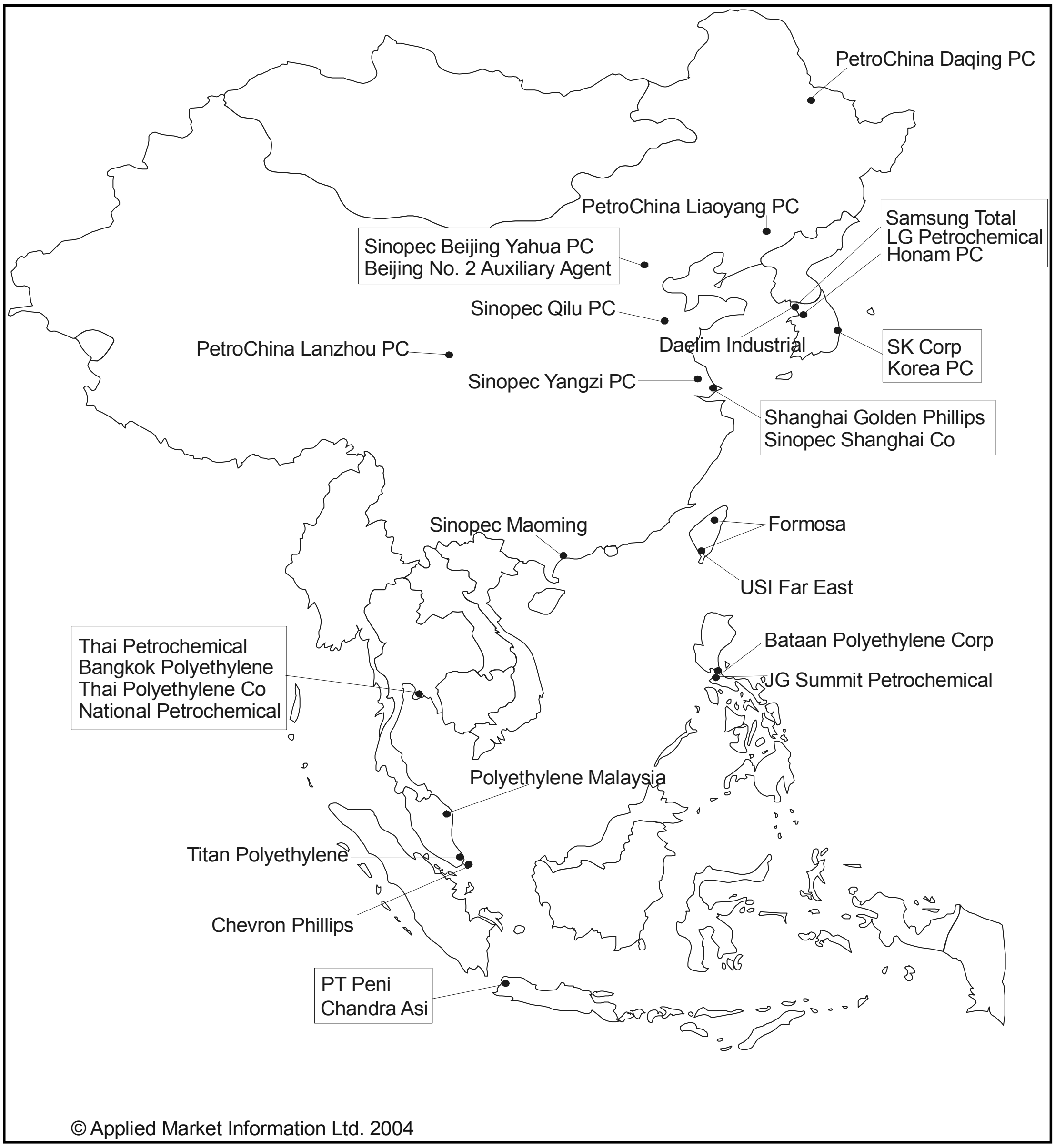
ExxonMobil is planning to expand its cracker on Jurong Island which could support expansion of this plant. Also operating in Singapore is Chevron Phillips which is a joint venture with Sumitomo and the Singpore Economic Development board. It expanded capacity in 1997 when it started a new 200,000 tonnes unit to add to its existing 190,000 tonnes of capacity on Pulau Ayer Merbau in Singapore.

FIGURE 3.3
LOCATION OF HDPE PLANTS IN SOUTH EAST ASIA 2004



The Singapore market is small and suffering from a shift of plastics processing operations to countries with lower labour costs. This, allied to replacement of ABS by PP in many higher specification products, will result in ABS showing limited growth in the future in the region, even though there will remain a hard core of high-end precision moulding work in the city state.

The market in Malaysia was marked down by weakness in some electrical and automotive sectors. Production of TV sets declined by 25% in 2003 and passenger car production was down 17%. These industries face strong competition from cheaper imports and in export markets.

Table 8.2
ABS/SAN DEMAND IN SOUTH EAST ASIA 2002-2004

Units: 000 Tonnes	2002	2003	2004[1]	% change 2002-2003
China	1,950	2,200	2,470	12.8%
Indonesia	27	31	32	14.8%
Korea	283	252	252	-11.0%
Malaysia	83	86	88	3.0%
Philippines	7	8	8	14.3%
Singapore	32	32	31	0.0%
Taiwan	156	152	155	-2.6%
Thailand	143	144	138	0.7%
Vietnam	15	18	20	20.0%
Others	1	1	2	0.0%
TOTAL	**2,697**	**2,924**	**3,196**	**8.4%**

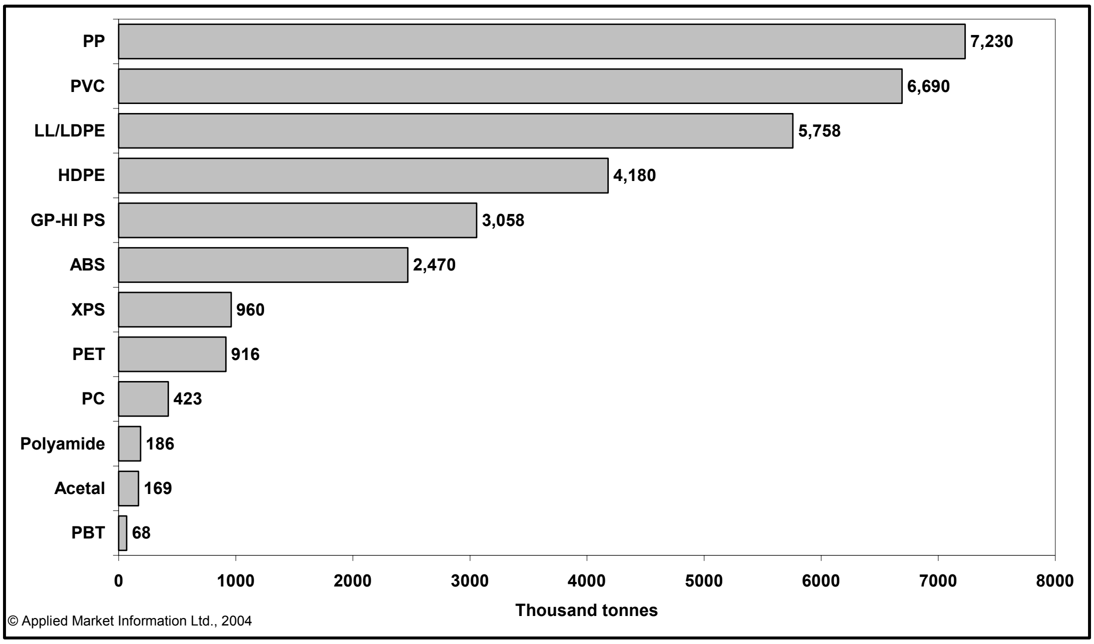
[1] *Forecast*

End use applications

ABS is a tough, glossy material with high impact resistance, which is ideally suited to injection moulding. Injection moulded products in electrical, electronic, automotive and household applications account for more than 85% of total consumption. The material’s high gloss finish, scratch resistance, impact strength even at low temperatures, low water absorption and good electrical insulation properties make it ideal for applications such as car interiors and mobile phone housings.

The sizeable injection moulding market in Asia is accounted for by the presence of leading global producers of household appliances, business machines, telephones and telectronics, such as Hewlett-Packard, Sony, Samsung, Matsushita and Hitachi, which have helped to stimulate demand and supply of injection moulding grades. There are also an increasing number of local producers which are attaining wider global reach, mainly Chinese based such as Haier Group of China, already the world’s second largest manufacturer of refrigerators or Konka Group, a leading producer of colour TVs, mobile phones and other consumer electronics in China. South East Asia is thus an important producer and exporter of electronics and household electrical appliances to Europe and North America.

FIGURE 14.2
THERMOPLASTICS DEMAND IN CHINA 2004



Polycarbonate usage has been showing the fastest growth in recent years advancing at rates of over 30% per year. The Chinese market is now around 400,000 tonnes the majority of it accounted for by components for the IT sector, mobile communications, construction industry and for CD/DVDs. Nearly all of China's polycarbonate demand in 2003 and 2004 was met by imports as China has just a handful of very small, local producers capable of only limited output. However, a number of new projects are in the pipeline, which should start coming on stream from 2005 and help to reduce China's reliance on imports.

Polyacetals is another sector where significant investments are being made in new capacity to meet China's burgeoning demand. As with most other engineering resins, China's existing capacity is small, mainly confined to pilot plants. The situation is now changing as a number of new joint venture investments are being built which will see China attain world class facilities. Investments are being made by Asahi-DuPont, and Ticona and Mitsubishi. Over the past five years demand for POM has increased by nearly 20% per year (1998-2003) with increased applications in electrical goods and the automotive sector.

Another product for which China is a major importer is plastics waste. It imports more than 3 million tonnes of plastic waste a year. The trade is made possible by the vast numbers of shipping containers sent around the world with Chinese exports and China's cheap labour to sort the material. Volumes of waste are rising inexorably around the world and landfill charges are rising steeply in the more developed regions, making it cost effective to send waste abroad. China's ability to buy and process this waste often undermines recycling initiatives in other regions and there are concerns that waste is often contaminated and not always properly sorted or processed. The Chinese government has introduced laws governing what can be imported, but these are rarely enforced.

2004 is expected to be another strong year of growth for polymer demand. Government measures introduced during the year to dampen China's runaway economic growth may have some limited impact on polymer demand. The chemical industry was not directly targeted but sectors such as construction and automotive were and these of course are