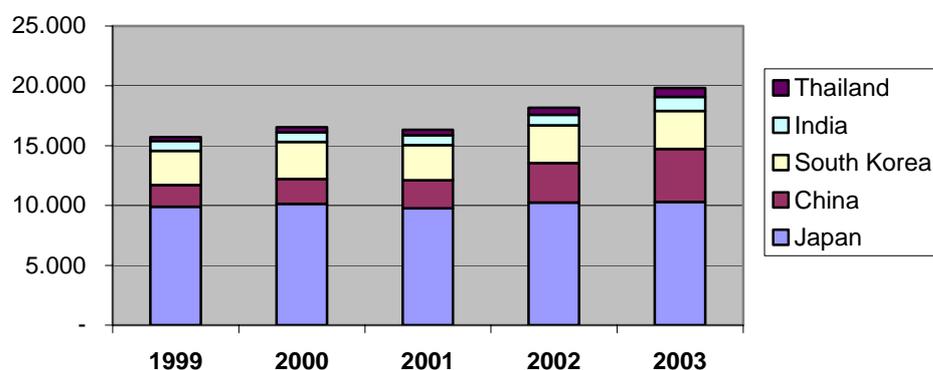




The Growing Automotive Industry in Far East creates a Potential for Advanced Minerals

We realize an enormous growth of automotive production in Far East countries, especially in China, Korea and Thailand. We can find all famous labels of Japanese, European and US-car makers in this business region. Partnerships of Western corporations with local motor vehicle producers support the economical development and contribute proven technologies.

Top Five Countries in Far East's Vehicles Production [in 1.000 units]

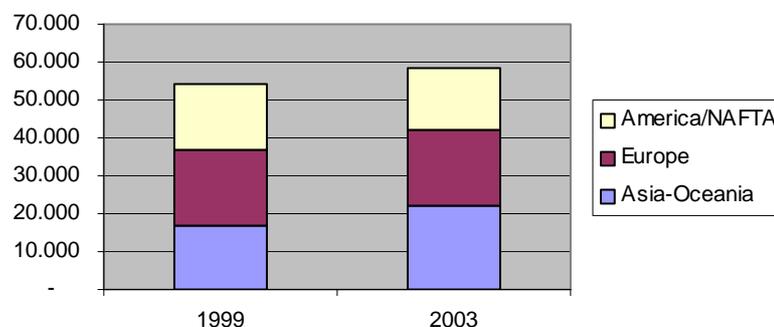


source: OICA 2004

The highest growth rates were shown for China; the trend is unbroken as forecasts expect production figures of 9 million vehicles or even more in 2010.

Volkswagen is by far the market leader in China, but the competition is going to participate strongly at this business in future. The automotive clusters are located in the Shanghai, Jilin and Guangdong provinces. Japanese carmakers invested heavily and plan to produce primarily passenger cars. OICA reported that China produced about 1.1 million heavy trucks in 2003, about 0.8 million light commercial vehicles and about 2 million passenger cars. Considering the automotive stagnation in North America and Europe, such growth rates, as we see in China, are quite remarkable.

Vehicles Production [1.000]



source : OICA 2004



Thailand is another interesting market place. After the collapse in 1998, when sales fell to their lowest level in a decade, Thailand's automotive industry has staged a dramatic recovery. Robust pick-up truck exports are driving the countries revival. The breakdown for 2003 shows about 0.25 million passenger cars, 0.5 million light commercial vehicles, and about 7,000 heavy trucks. At the heart of this significant step forward is the decision by some major automakers to make Thailand their production base in ASEAN and a hub for worldwide exports. Honda and Toyota are the driving forces in this country.

The Korean automobile industry also fell back during recession. The Korean automotive segment, like other industries, underwent much hardship in 1998. In line with the global restructuring of the international automotive industry, the Korean automotive sector has been characterized by a large number of mergers involving OE manufacturers and component suppliers. Considering this trend of consolidation, most of the remaining domestic companies seem to have a chance for survival. In 2003 nearly 2 million cars were produced, Hyundai/Kia are the market leaders followed by Daewoo/GM.

Polypropylene is the most important plastic material for vehicles

Most of the automotive plastic parts are made of Polypropylene respectively glass fibre and mineral filled PP compounds. The Polyolefin- industry also shows a significant growth in the region. Most of the PP-resin is used for packaging and textiles. Today, not all types of injection moulding grades are produced locally which are needed for high impact automotive grades. A significant amount of the advanced plastic compounds are processed in Japan and Europe and are shipped to the Far East for local moulding.

Recently the global PP-producers started to increase the local compounding capacities in Far East significantly (e.g. Basell-group, EXXON Mobil, Mitsui Chemicals) in order to produce the full range of advanced compounds in this region. Nevertheless there is also space for other multinational players such as Dynachem (Taiwan), and A.Schulman (USA, Europe), besides the local PP-resin producers with associated compounding capacities.

High-end mineral fillers are requested

Owing to globalization trends, the multinational compounding companies' invite their established mineral filler and glass fibre suppliers to start with local processing in Far East in order to provide the same quality products at more competitive prices. The mineral *Talc* is the most used mineral filler in PP-compounds for automotive applications. As China is by far the largest mining area for talc in the world, the demand meets the natural resources by far. However, there is no global talc mining and processing company operating in China so far. All of the major talc mining operations purchase crude talc from China, and ship back some of the high end products to China, Thailand, Malaysia and Korea after processing in USA, Japan or Europe. Some Japanese talc processing companies already started to micronize talc products in China with focus on Japanese carmakers in these countries. They certainly have a favoured position at the Japanese compounding industry in the Far East region by tradition.

China's talc mining operations control the crude ore; their grinding operations have sufficient capacities for standard products, but they need to improve the technological level for both, the production of micronized & submicron talcs and the application technology. These products are demanded by the automotive industry in future.

schoconsult provides know how

schoconsult® is specialized in mineral fillers with special focus on PP-compounds for automotive applications and electro-appliances. Intensive research and development work and systematic marketing analysis and strategies created a comprehensive knowledge base to develop high cost performance products in cooperation with multinational and local manufacturers. schoconsult has been working in all major business regions of the world for 20 years already and has the capability to provide premium know how.