World Thermoplastic Elastomers

Industry Study with Forecasts for 2017 & 2022

Study #3051 | August 2013 | $6400 | 361 pages
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World demand to rise 5.5% yearly through 2017

Global demand for thermoplastic elastomers (TPEs) is forecast to rise 5.5 percent per year to 5.8 million metric tons in 2017, valued at more than $20 billion. Advances will be driven by ongoing product innovation on the part of TPE manufacturers, allowing these materials to continue to displace traditional elastomers and thermoplastics in a variety of applications. Additionally, TPE demand will benefit from the ongoing push to reduce motor vehicle weight, particularly as automotive fuel economy standards around the world become more stringent. Healthy growth will also be fueled by an improved economic outlook in North America and Western Europe, while advances in emerging countries will benefit from increased adoption of TPEs over competing materials. Limiting further gains, however, will be maturity in markets such as footwear and motor vehicle bumpers.

Asia/Pacific region to remain largest market

The Asia/Pacific region will remain the largest market for TPEs through 2017, rising at an above average pace to account for nearly half of world demand. China, the world’s largest consumer of TPEs in volume terms, will continue to see more than eight percent annual growth in demand. Regional gains will also benefit from robust expansion in India and Southeast Asia, whereas growth in the Japanese market will remain sluggish. Other world regions that will enjoy above average advances in demand through 2017 include the Africa/Mideast region, which currently has the lowest TPE consumption levels per capita. TPE demand in North America and Western Europe will see substantial improvement compared to the recession-plagued 2007-2012 performance. However, these regions are expected to account for an increasingly smaller share of global TPE demand.

POEs, TPVs to be fastest growing product types

Styrenic block copolymers (SBCs) will remain the leading TPE product type through 2017. However, SBC demand will rise at a below average pace compared to TPEs overall, limited by a high degree of market saturation in many large volume applications. The fastest growth is expected for polyolefin elastomers (POEs), a relatively new TPE product class that is gaining rapid acceptance as a performance additive for plastics and packaging adhesives. Strong gains are also forecast for thermoplastic vulcanizates (TPVs), which are penetrating new applications in motor vehicle, consumer, and medical product markets. A resurgent motor vehicle industry will bolster demand for thermoplastic polyolefins (TPOs), although advances will be restrained by maturity in applications such as automotive bumper fascia.
Sample Text, Table & Chart

ASIA/PACIFIC

South Korea: Market Outlook

Demand for thermoplastic elastomers in South Korea is expected to increase 3.8 percent per year through 2017 to 206,000 metric tons, valued at $695 million, up from 134,000 metric tons valued at $151 million in 2012. The region is forecast to experience below average gains in TPE demand through 2017, as motor vehicle production growth in South Korea is expected to decelerate considerably from the pace of the 2002-2012 decade, although a pickup in construction and personal consumption expenditures will benefit TPE demand in the country.

Because of the prominence of the automotive industry in South Korea, motor vehicles have accounted for the bulk of TPE demand in the country -- nearly 60 percent of the total in 2012, the highest of any major country in the world. After posting healthy gains from 2002 to 2012, motor vehicles will be the slowest growing market for TPEs in South Korea, restrained by sluggish advances in the domestic automotive industry. Nonetheless, TPE demand on a per-vehicle basis will benefit from continued supplantation of rubber and plastic parts in automotive applications. TPEs are finding their most favorable opportunities in smaller sectors in South Korea, particularly consumer goods such as housewares, sporting goods, hand and power tools, and small appliances. TPEs are also widely used in the industrial and manufacturing sectors, where they are used in a wide range of parts and components (e.g., belts, hoses, bumpers, and vibration dampening elements). The most rapid growth in South Korea is expected in smaller volume TPE markets, including medical products, packaging, and wire and cable jacketing.

TPOs and TPVs account for a large portion of TPE demand in South Korea, combining for about half of the 2012 total, due to the importance of the motor vehicle market. As expected, TPOs will see below average gains in demand in South Korea through 2017, hampered

TABLE VII-8
SOUTH KOREA: THERMOPластIC ELASTOMER DEMAND BY PRODUCT & MARKET
(thousand metric tons)

<table>
<thead>
<tr>
<th>Item</th>
<th>2002</th>
<th>2007</th>
<th>2012</th>
<th>2017</th>
<th>2022</th>
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<tbody>
<tr>
<td>Manufacturing Value Added (bil 2011$) kg TPE/000$ MVA</td>
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<td>Thermoplastic Elastomer Demand</td>
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<tr>
<td>By Product:</td>
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<tr>
<td>Styrenic Block Copolymers (SBCs)</td>
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<tr>
<td>Thermoplastic Polyolefins (TPOs)</td>
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<td>Polyolefin Elastomers (POEs)</td>
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<td>Thermoplastic Polyurethanes (TPUs)</td>
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<td>Thermoplastic Vulcanizates (TPVs)</td>
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<td>Copolyester Elastomers (COPEs)</td>
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<td>Other TPEs</td>
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<td>By Market:</td>
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<tr>
<td>Motor Vehicles</td>
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<tr>
<td>Consumer Goods</td>
<td></td>
<td>9.0</td>
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<tr>
<td>Asphalt &amp; Roofing</td>
<td></td>
<td></td>
<td>4.5</td>
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<tr>
<td>Adhesives, Sealants, &amp; Coatings</td>
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<td>9.0</td>
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<tr>
<td>Industrial Products</td>
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<td>9.0</td>
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<tr>
<td>Other Markets</td>
<td></td>
<td></td>
<td>9.0</td>
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<td></td>
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<tr>
<td>$/kg TPE Demand (mil $)</td>
<td>225</td>
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</tbody>
</table>

CHART IX-1
WORLD THERMOPLASTIC ELASTOMER MARKET SHARE
($14.8 billion, 2012)

[Chart showing market share by region with South Korea highlighted]
Chi Mei Corporation
59-1, Sanjia Rende District, Tainan 71702 Taiwan
886-6-266-3000
http://www.chimeicorp.com
Revenues: US$6.3 billion (2012, as reported by company)
Employment: 16,000 (2012, verified by company)
Key Products: styrenic block copolymers

Chi Mei is a privately held manufacturer of plastics, rubber, petrochemicals, and displays. The Company is also involved in construction, trading and logistics operations. Chi Mei offers its products mainly in the Asia/Pacific region, as well as in other countries around the world.

The Company is involved in the world thermoplastic elastomer (TPE) industry through the production and sale of KIBITON styrene-butadiene-styrene styrenic block copolymers (SBCs), which are designed to provide the elasticity of rubber without the need for curing. KIBITON SBCs are used to produce such items as shoes, toys, asphalt, adhesives, and instrument handles. Specific types include non-oil extended types, which feature high hardness, transparency, and high foaming ability; and oil extended grades, which can be used with large quantities of additives. Chi Mei produces KIBITON SBCs at a plant in Tainan, Taiwan. The Company’s products are sold via sales offices in Taiwan, China, and Japan. In 2012, Chi Mei shipped 14,030 metric tons of TPEs, which represented revenues of $42 million.
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Other Studies

Silicones
US demand for silicones is forecast to climb 4.7 percent annually to $3.1 billion in 2017. Advances in the key fluoropolymers segment will trail the average growth rate, but these resins will continue to offer the best opportunities for growth. Polyketones, polyphenylene sulfide, and sulfone polymers will achieve the fastest gains from smaller bases. This study analyzes the $2.4 billion US high-temperature plastics industry, with forecasts for 2017 and 2022 by fiber, product and market. The study also evaluates company market share and profiles industry players.
#3092 ................. October 2013 .................. $5100

High-Temperature Plastics
US demand for high-temperature plastics will rise 5.8 percent per year to $3.1 billion in 2017. Advances in the key fluoropolymers segment will trail the average growth rate, but these resins will continue to offer the best opportunities for growth. Polyketones, polyphenylene sulfide, and sulfone polymers will achieve the fastest gains from smaller bases. This study analyzes the $2.4 billion US high-temperature plastics industry, with forecasts for 2017 and 2022 by fiber, product and market. The study also evaluates company market share and profiles industry players.
#3051 ................. June 2013 .................. $5100

World Silicones
World demand for silicones will rise 5.9 percent per year to $18.9 billion in 2017. The Asia/Pacific region will remain the largest and fastest-growing market, but the rate of growth will slow. The construction segment will grow the fastest based on a recovery in the silicone-intensive construction sectors of the US and Western Europe. This study examines the $14.2 billion world silicones industry, with forecasts for 2017 and 2022 by market, region, and for 15 countries. The study also evaluates company market share and profiles industry participants.
#3022 ................. May 2013 .................. $6100

Custom Thermoplastic Compounding
US demand for custom compounded thermoplastics is forecast to rise 5.0 percent annually to 11.4 billion pounds in 2017, valued at $14.3 billion (resin content only). Construction will offer the best market prospects, as the industry recovers from recession. PVC represents the largest and fastest growing compounded thermoplastic. This study analyzes the 8.9 billion pound US custom compounded thermoplastic industry, with forecasts for 2017 and 2022 by product, market and application. It also evaluates company market share and profiles industry players.
#2991 ................. February 2013 .................. $5100

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